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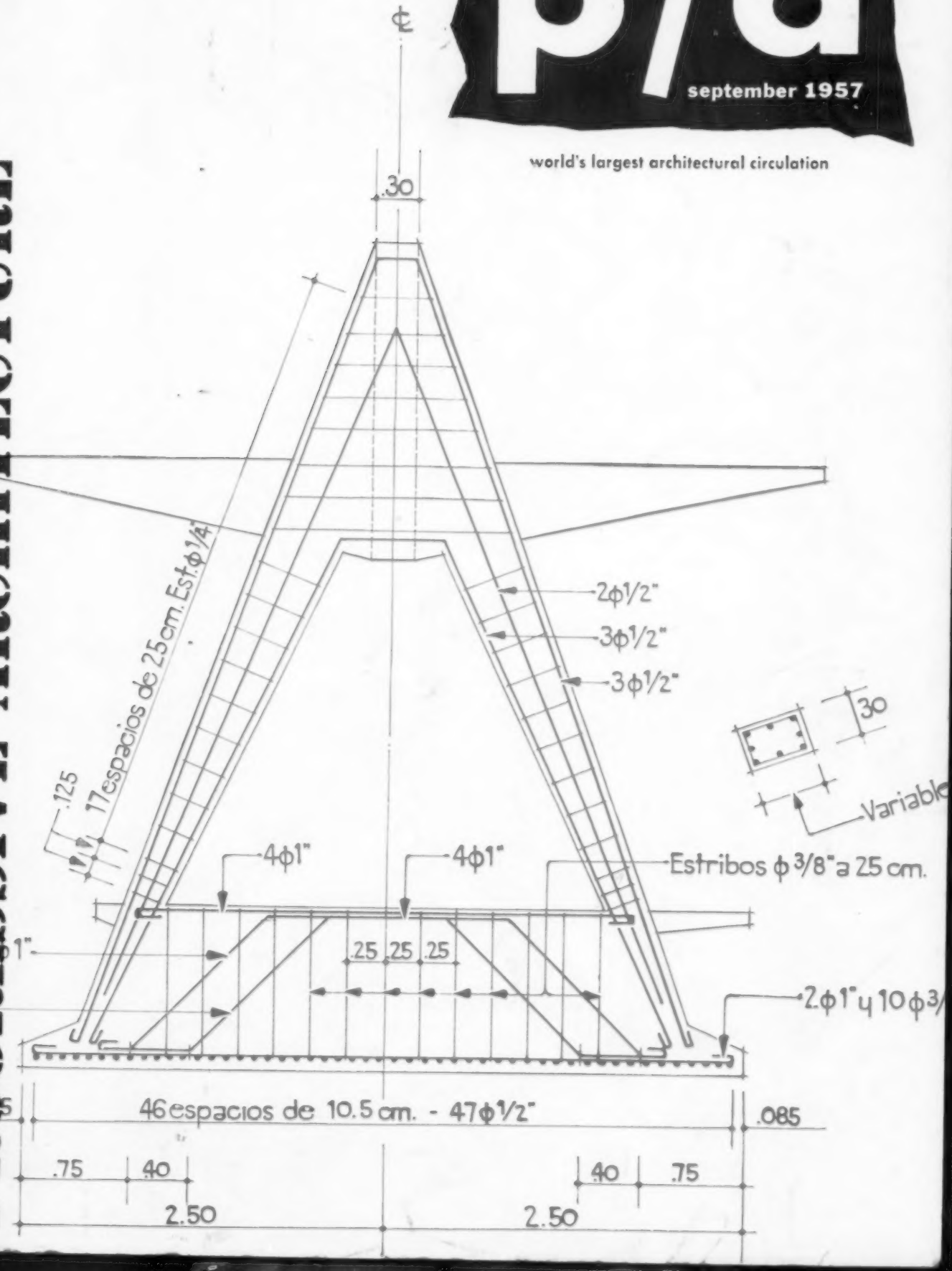

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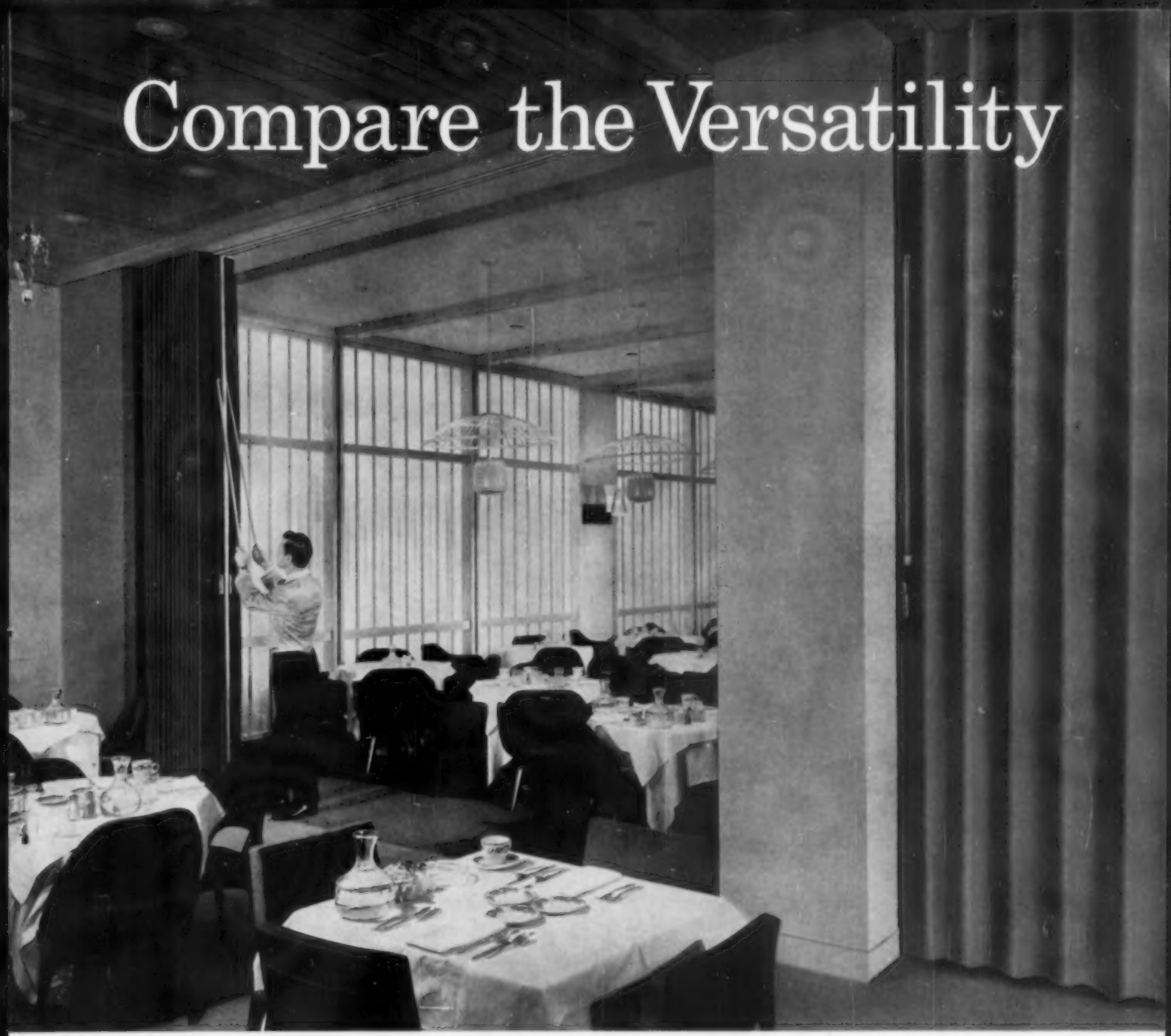

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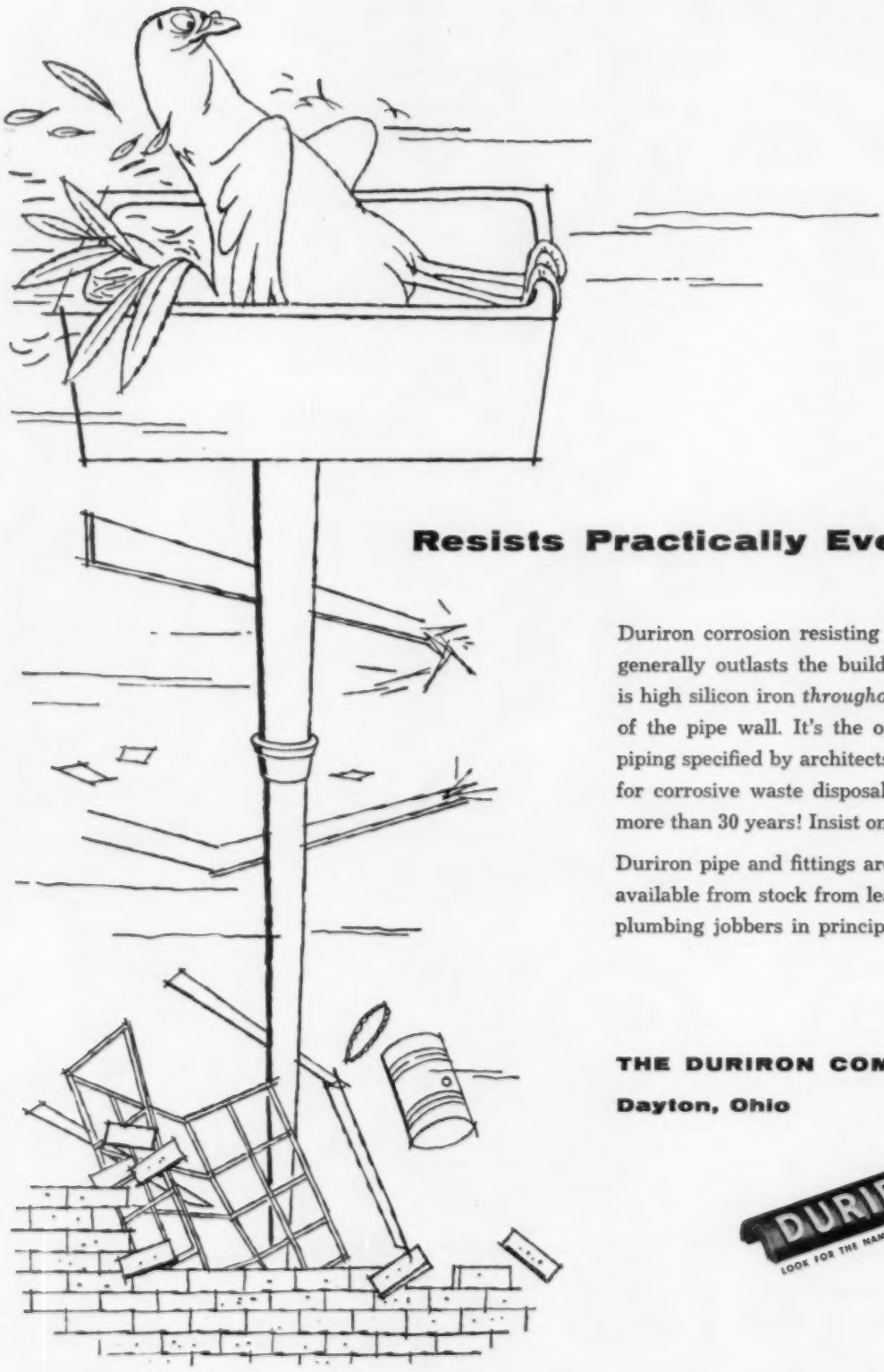

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# *It's the Law* by Bernard Tomson

**P/A Office Practice *article discussing a decision that could halt construction of "model homes" in areas zoned for residential use.***

Is the construction and exhibition of a developer's "model" home, a business use of property in contravention of a residential-zoning use ordinance? The answer to this question is of considerable importance, for the use of model homes has become the chief method through which new homes are sold, particularly in large developments.

A recent decision in New York (*City of New York* v. *Jack Parker Associates, Inc.*) held that model homes which were not located on the tract being developed, violated a zoning ordinance which restricted the property to one-family residences. This decision has been of concern to builders, because of its possible extension.

In this case, the builder was improving a tract of land on which approximately 678 homes were to be built. In order to promote the sale of these homes, the builder also erected four one-family dwellings, approximately one-half mile from the development in question. Across the street from the model homes, the builder maintained a sales office and a parking lot for potential purchasers, who were directed at the office to the models.

Permits for the erection of the model homes had been duly issued and, in the application for such permits, the builder had stated he was desirous of erecting "model homes." It was, of course, the intention of the builder to sell the model homes for residential use, after they had served their purpose as models.

The model homes were connected by concrete walks; floodlights illuminated the homes at night; and each of the models contained furnishings with signs indicating the department stores which had supplied the items.

Due to the fact that hundreds of people, particularly on weekends, were visiting and inspecting the model homes, many complaints were received by the authorities from neighboring residents, and the builder was charged with violating the zoning law.

The model homes were located in an area defined as a residential district. The zoning law, in defining the buildings which could be constructed in a residence district, provided:

"In a residence district no building or buildings shall be erected other than a building or buildings arranged, intended, or designed exclusively for one or more of the following uses: (1) Dwellings, which except as hereinafter provided . . . shall include dwellings for one or more families and boarding houses, and also hotels which have 30 or more sleeping rooms, but shall not include motels. . . . (9) In a residence district, no building or premises shall be used for any other than a use above specified for which buildings may be erected and for the accessory uses customarily incident thereto. The term 'accessory use' shall not include a business, nor shall it include any building or use not located on the same lot with the building or use to which it is accessory. . . ."

The ordinance also provided that in the district in which the model homes were located, "no dwelling shall be erected or altered other than for occupancy for a single family."

The Court, in granting an injunction enjoining the builder from using the homes in question as model homes, relied upon the word "exclusively" as contained in the zoning law. The Court said:

"The language of the pertinent provisions of the Zoning Resolution is clear. Section 3 limits the erection and use of buildings in a residence district to those 'arranged, intended or designed *exclusively*' for one or more of the uses specified, and then provides, in subdivision (9), that 'no building or premises shall be used for any other than a use above specified,' and customary accessory uses which shall not, however, include a business. By virtue of the further limitation contained in subdivision (a) of Section 16-C, it is clear that in the G-1 district in question only one-family dwellings arranged, intended or designed *exclusively* for use as such are permitted. While defendants' four model homes were intended eventually to be used as dwellings, they were erected primarily for use as an indispensable part of defendants' business of selling hundreds of other homes to be erected at another location some five blocks away. In the opinion of this Court such a use violates the zoning resolution. This is true even though no actual sales or negotiations for sale took place in the model homes and even though no salesmen were present in the homes. By no stretch of the imagination can it be said that the model homes were being used as dwellings, much less exclusively so."

The opinion of the Court in the New York case, was based upon the fact that the model homes were not located on the tract which was being developed. If the use of a model home in one location to sell homes in another location is a business use, would it not as logically follow that model homes located on the very tract that was being developed would also constitute a business use? The New York Court asserted that it would have arrived at a different determination if the model homes were located on the tract being developed. The Court said:

"It does not follow, however, that enforcement of a zoning ordinance in the one case would require a like result in the other. Indeed, since it is common knowledge that the almost unvarying practice of builders to-day to sell homes by the use of sample or model homes, and since it is in the public interest to permit them so to do, this Court would arrive at a different determination if the model homes here involved had been erected on the tract sought to be developed. . . . Zoning ordinances must be reasonable and conducive to the public welfare. While they may be held so to be under one set of circumstances, the result may well be different under another. . . . In the opinion of this Court it is reasonable and in the public welfare to enforce this zoning resolution against the defendants."

The last point was not in issue in the case. It is a matter of conjecture what the result will be if the precise issue arises. It can be argued that the public welfare is affected adversely if model homes are permitted in residential areas wherever they are located. Other courts might reach the conclusion that if the use of homes as models for the sale of other homes in a different location is considered a business use, then model homes located on the tract which is being developed should also be so considered. On the other hand, they may follow the *obiter dictum* in the case discussed. If the scope of the New York decision is extended, the sales techniques of builders and developers will require extensive modification. In any event, the sequelae of the *Jack Parker* decision should be closely watched.

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# *Mechanical Engineering Critique* *by William J. McGuinness*

**P/A Office Practice *column on mechanical and electrical design and equipment, devoted this month to Radiant Heating and Cooling by Air.***

Application of new and efficient heating and cooling processes frequently awaits the development of a "package" method of installation. Such has been the case with the use of air for radiant heating and cooling. An ancient principle, newly adapted to modern occupancy, it consists of passing warm air (in winter) and cool air (in summer) behind a surface to provide the occupants on the other side with the comfort of a radiantly modulated area. This is truly a unique method of environmental control. It substitutes an evenly distributed regulation for the concentration from air diffusers and registers, radiators, and convectors. Air temperature within the space is often held uniform within a tolerance of one degree. Introduction of the air into the room after its passage behind the radiant surface adds the benefits of air motion, control of humidity, and freshness.

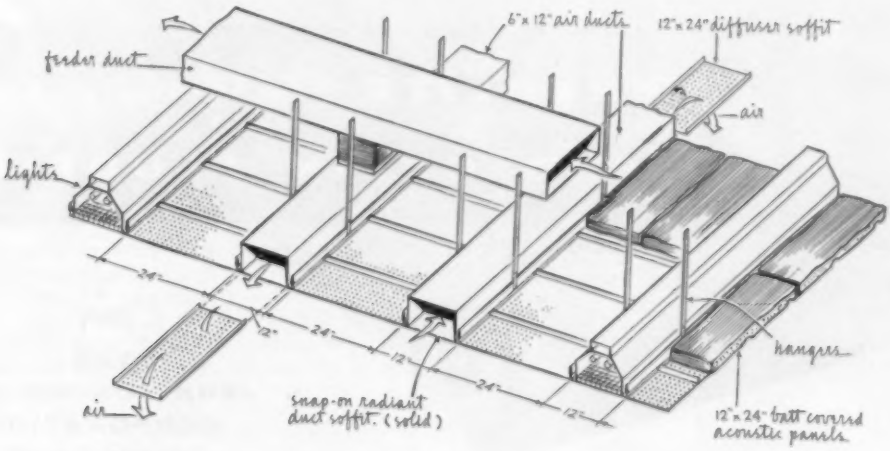
In addition to the high cost of custom installation, radiant cooling poses a problem which it shares with other air-cooling systems. Frequently the air rate required for cooling is greater than that which is needed for heating. The control of drafts caused by air entering the room is, therefore, usually a problem in summer operation.

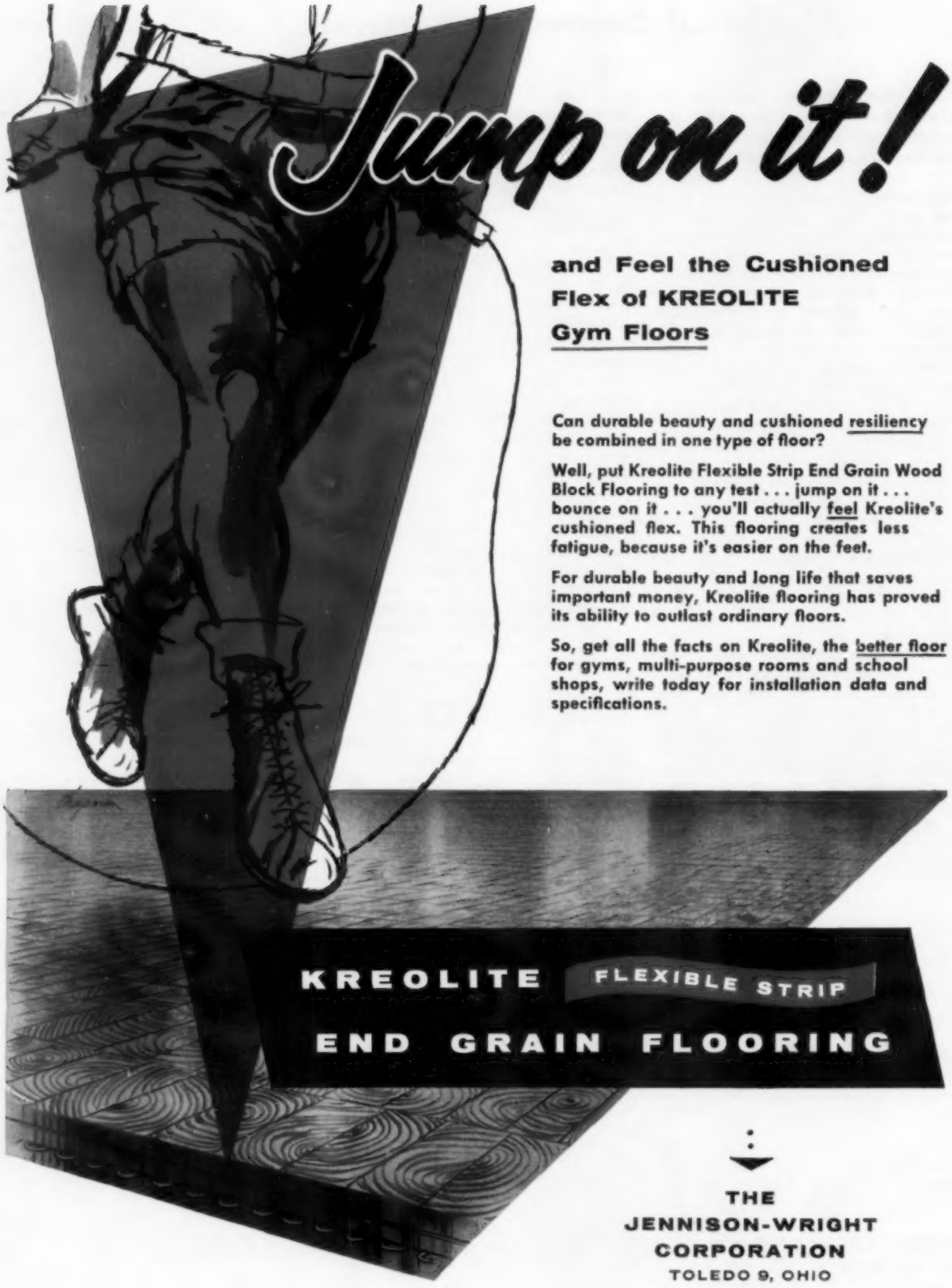
With great skill, Mechanical Engineer John D. Dillon, New York, has developed a standardized construction; engineering design, however—as always—is still needed for each application. Dillon has also licked the problem of drafts and chilly air while maintaining great flexibility. The new method uses materials of the Simplex Ceiling Corporation and is based upon experiments conducted by Richard P. Goemann, formerly a member of Dillon's staff.* The ceiling is used for both the supply and return of air. All parts are metal; several elements are used—flush strip lighting, two types of aluminum snap-on panels—solid and perforated—ducts, and batts. The entire assembly, comprising heating, cooling, lighting, and sound reduction—including feeder ducts—can be accommodated in an 18 in. depth.

The system has been in use for three years at the AT&T building, White Plains, New York; architects were Lorimer & Rose. Another successful installation is in the Beckley Memorial Hospital, West Virginia; architects were Isadore and Zachary Rosenfield. Dillon was mechanical engineer for both jobs. Unlike conventional cooling systems which return air at 80 F and deliver it at 60 F at concentrated location, the radiant scheme at White Plains has a milder and more diffused action. The 80 F return air is cooled to 50 F and then delivered above the duct soffits. After 15 degrees are used to cool these panels, the air is discharged to the room at 65 F through perforated panels. Panel perforations, which are ⅛ in., represent 1/40 of the panel area and occur only where entry of air is desired. Low velocity results from proportion and from the fact that the air rate is about 40 percent less than in conventional systems. If, with this reduced delivery rate, coolness is still found, a diffuser panel can be unsnapped and moved away in minutes. Complaints are few and quickly satisfied. At White Plains, the ceiling assembly floats like an island above the offices, since it is held several inches away from the exterior walls. Through this slot, return air is drawn up to a plenum above the ceiling, where ducts carry it back to the central plant.

The interesting modular pattern is shown (*below*). Other patterns are possible. Panels are obtainable in one ft widths and in lengths from one to five ft. The random effect is interesting and unobtrusive. The radiant soffit of ducts is about 15 percent of the whole surface. About one ft of width of the adjacent metal panels picks up the low temperature and acts as an adjunct radiant surface. Thus, about 45 percent of the ceiling is radiant. To assure radiant effect, the porous diffusers are at the ends of duct runs which are warmed (or cooled) by air before delivery to the room. Condensation is never a problem and ducts are not covered except in the case of some long feeders. Panels should be snapped off for washing once in about three years. There are about 12 major installations of this type now in operation in the United States. Its use in hospitals is a significant endorsement of the sensitivity of its performance.

*October 1951 P/A

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# *Guaranteed or Reliable Estimates--II*

Several months ago on this page (JUNE 1957 P/A) there was an article discussing the problem of more reliable preliminary estimates and the architect's responsibility to design within the client's stated budget. Several instances of costs getting out of hand were cited, several questions were asked about responsibility, and several suggestions were made as possible approaches to a solution. Since that article appeared, many reponses have come to the Editors from practicing architects, and some of the more specific ones are summarized here. Numbers in the paragraphs that follow refer to letters from the following correspondents:

(1) Arthur Gould Odell, Jr., Charlotte, N. C.
(2) Thorne Sherwood, Stamford, Conn.
(3) T. Trip Russell, Miami, Fla.
(4) Beryl Price, Philadelphia, Pa.
(5) Arthur Fehr, Austin, Tex.
(6) Anthony L. Pullara, Tampa, Fla.
(7) Suren Pilafian, Detroit, Mich.
(8) James A. Spence, Saginaw, Mich.
(9) Joseph Willard Wells, Auburn, Ala.
(10) Roy N. Thorshov, Minneapolis, Minn.
(11) D. Kenneth Sargent, Syracuse, N. Y.
(12) A. Gordon Lorimer, New York, N. Y.

Specifically, the questions raised were:

**Is there a need and a responsibility to meet budget limitations accurately?** Answers were all *yes*, but many were qualified. It was generally agreed that the too-frequent over-the-budget final bid hurts the profession: *I doubt if there is any architect who hasn't had at least one experience where his project cost more than anticipated* (1); where this has happened it has *left a very bad taste with a client and . . . has set (the profession) back in our public relations* (6); on the other hand, *the finest public relations weapon an architect can have is to come close to an owner's budget* (5); *surely the whole profession must take the necessary steps to improve this important part of our services . . . the man in the street does not think the architect can make an estimate; in fact many believe that we like to increase the cost to make our fee greater* (11).

Some felt that responsibilities vary depending on the type of work: public work, where *accurate cost estimates are required* (4); and *it is the architect's responsibility to revise the drawings to get within the estimate. This is probably not too good for the architect or client, but it does seem to produce the desired effect* (8); large private commercial and speculative work, where *at least two "costing" efforts should be made;* smaller private work, where one can *trust to experience to bring the job as close to the budget as possible* (4).

The point was repeated many times that budgets are often unrealistic and that *it is very easy for the architect to protect himself by advising the owner in writing that (the job) cannot be done within the budget* (1); *the architect must not accept a budget that he knows is inadequate and pray for a miracle. Such miracles do not happen* (3); *when the architect submits his preliminary estimate, if he would explain the possible fluctuations of the market during the several months necessary for production of contract drawings, and the normal variations of contractors' bids on finished documents, perhaps a better client understanding and relationship would develop* (11); the architect must *properly evaluate the building program with his client so that he does not become overly optimistic* (10)—but, *short of rendering a feasibility report, which in itself is a service that we render for a fee* (6).

Only one correspondent has questioned the basic responsibility to estimate as accurately as possible: *What degree of accuracy should be expected of architects estimates? Does a lawyer guarantee his judgment or opinion? How many doctors will estimate the cost of a patient's treatment?* (9). All others agreed that *any architect who makes estimates which are far from the actual costs brings discredit to the profession* (8).

**Should the architect continue to refuse to guarantee estimates?** A resounding and unanimous *yes!* An important comment, however, was that *the architect should be willing to make minor changes to bring a project in line with the budget* (11). In fact, one architect suggested that *where the cost of the project is one of the predetermined factors, the architect's responsibility should include the revising of plans at his expense to bring the cost to within the predetermined limits, if necessary. He should not be liable for losses or damages . . . but neither should he be denied the opportunity to replan to reduce costs* (7). Here is a specific and important suggestion which would require a new, *clearly stated part of the agreement* in the AIA Form.

**How can estimates be made more reliable?** Periodic cost-control checks during preparation of final drawings and specs had support: *checks* (should be) *made during progress of working drawings* (8); *we try to maintain an absolute check to see whether we are straying from the budget, because we cannot afford to prepare more than one set of contract documents* (6); although there was a warning that *trades overlap to too great an extent* to be sure that *in mid-development of working drawings, reliable estimates of cost can be developed* (2). Most felt, however, that constant supervision of preparation of drawings by a responsible principal was the most important factor: *it is up to the job captain or architect to see that the drafting team works within pre-*

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## *Guaranteed or Reliable Estimates—II*

*scribed limitations* (1); *the closer the principal of architectural firms can stay to the details of their operation,* the more close to estimate will final bids be (4).

**Specifically, how should preliminary estimates be made, to insure greater reliability?** Three suggestions made in the original article met with mixed reaction.

Use of "friendly" contractors is generally disapproved: *preliminary bids from reliable area builders have a meaningless disparity to us, and indicate nothing for budget purposes* (2); *we cannot depend on calling in a friendly contractor* and question whether this *is a truly professional method* (6). One finds that the contractor may help as *a good added check on the architect's estimate* (8); and another that *their preliminary estimates are sometimes helpful—other times meaningless as a guide to a budget* (2); but there was general agreement that, in any case, they should be *remunerated for taking off material and labor* (2); *it would be highly unprofessional to ask our friends the Jim L. Filler Co. to do this as a favor* (3); and the architect using these services must *reimburse the contractor for his time* (1).

Reliance on square-foot and cubic-foot data also met with a mixed reception: *if an architect has a considerable volume of work, he should be able on a square foot or cubic foot basis to make comparative cost estimates which should be sufficiently realistic for budgetary purposes* (1); *his own sources of information based on the work that he has done* (10); checked against *percentage for assumed increase* (2); and differences in location should, many felt, be sufficient. However, there was realization that this data is *reliable only in a general sense* (3); *square foot or cubage methods are unreliable yardsticks for a final preliminary estimate upon which the amount of mortgage or financing is determined* (11).

The final suggestion — that professional quantity surveyors be used, both for preliminary estimates and periodic cost checks—met with surprising favor, and may be the most important result of this study. *In all our present work we employ professional estimators to help us establish the cost at certain check points* (5). Some felt that such a person should be on the payroll: *we are definitely thinking in terms of personnel that would concentrate on cost control factors for our projects so that we are advised at all times as to the cost status of a job* (6); another solution is to *employ a cost estimator who is a licensed general contractor on an hourly basis* (3); *estimate of the professional quantity surveyor or from a regularly employed estimator for which the architect pays a fee seems the only logical approach to accurate budgets. Such methods also give the client some confidence in the estimates. The estimate should be made upon an outline specification and adequate preliminary structural and mechanical plans. When the project goes to the drafting room these form a basis for the production of the plans* (11). One hitch: as a paid consultant, he is not always available; *in small towns there are usually no qualified estimators or quantity surveyors* (1).

The great obstacle to use of the professional estimator-surveyor is cost. Some felt that *there is sufficient profit in any architect's fee to hire an estimator* on projects difficult to estimate (1). Others disagreed: *qualified estimating consultants can be used only when the proper fees and compensation are made available* (4); and, in one man's estimate, *this should boost an architect's fee not less than two percentage points* (4). A solution suggested several times was that *with the advice of the architect, the owner might be persuaded to spend the money for the professional estimator* (2). This would have the added advantage of letting *the owner discover the impossibility of forecasting the exact cost of a project; when the architect hires the professional estimator, in a sense he is implicated in guaranteeing these estimates* (2).

Leaving now the convenience of numbers substituted for names, the Editors let A. Gordon Lorimer speak strongly for the use of the professional specialist:

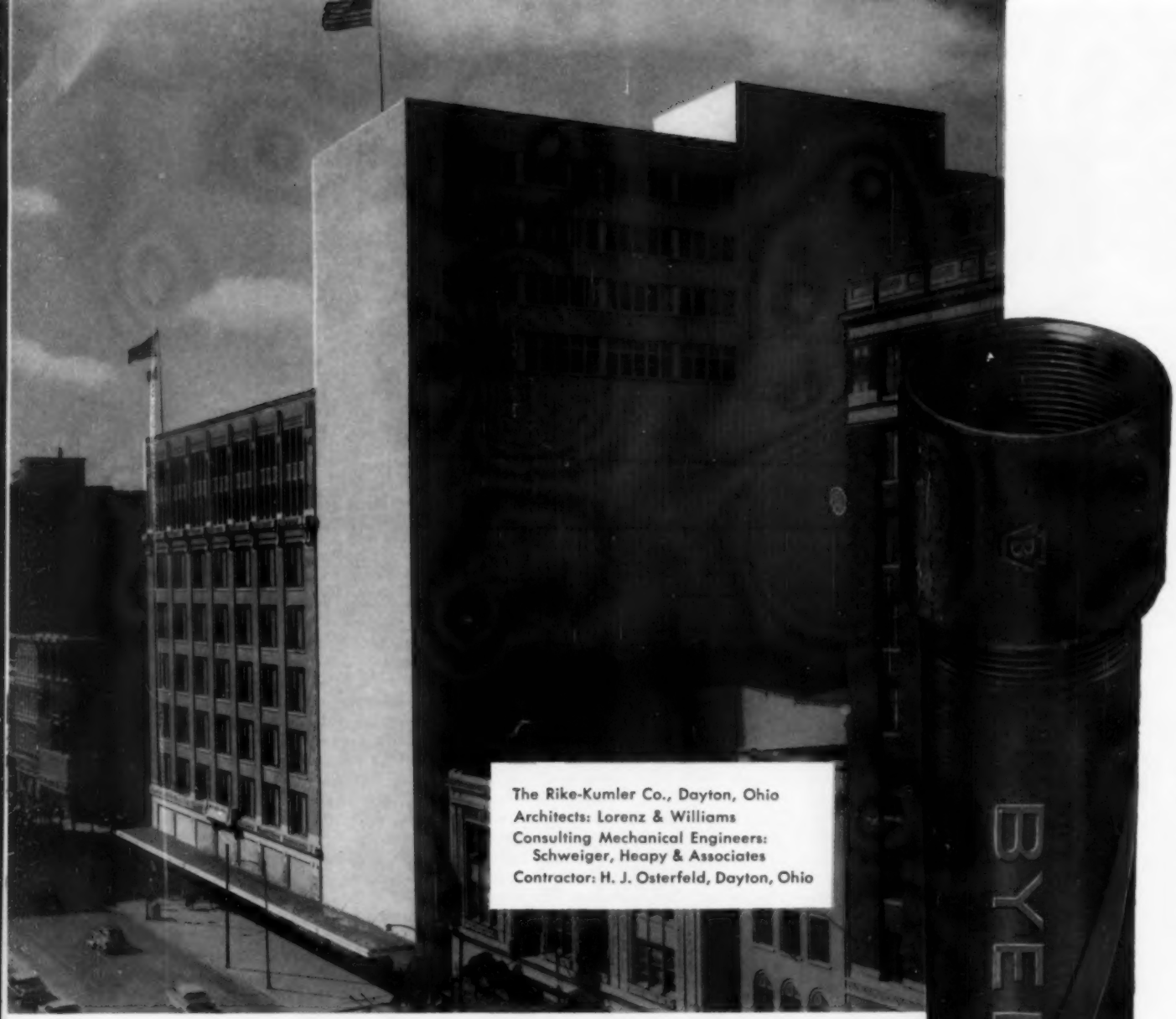
"After much consideration and experience with this problem I have the conviction that the only practical solution lies in the general adoption of the professional quantity surveyor system, wherein a quantity and cost specialist is retained directly by the owner, or by direct arrangement with the architect for the specific function of preparing detailed material and equipment bidding schedules for the use of all bidders.

"If adopted nationally this would obviously eliminate a tremendous amount of repetitive take-off, all of which cost is now an overhead charge against the national building business. If such wasteful practice were eliminated, the client could in the over-all afford to pay for specific professional services in this field.

"This specialist would be serving many offices and, dealing with a broad range of contracts, his knowledge of market conditions and costs can obviously be much more accurate than that of the busy architect whose duties have already been greatly increased and complicated by the highly developed technical improvements of the modern building, and whose services to the client already embraces many facets not encountered in earlier days when fee habits and schedules were established.

"Such quantity surveyors would obviously stand or fall on the average competence and accuracy of their estimations.

"I believe this is as far as the client can hope to go in protecting himself in regard to project cost and this, with proper professional integrity among all concerned should produce very sound results."




The Rike-Kumler Co., Dayton, Ohio
Architects: Lorenz & Williams
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REINHOLD

### concealment best

*Dear Editor:* The material contained in "Heating Historic Structures" (AUGUST 1957 P/A) is extremely interesting—and to any firm restoring an historic monument, it would be invaluable.

We didn't get as far as the heating with Hamilton Grange project, so the problem still has to be faced some day. However, concealing the heating equipment is certainly the best thing to do, if it can be done at reasonable cost.

I think this article is timely and should interest many of your readers.

FRANCIS KEALLY
New York, N. Y.

### mounting interest

*Dear Editor:* In the light of mounting interest in the Preservation Movement in this country, and the increasing awareness that the special technical problems involved in such restorations may have to be met with imaginative or even unorthodox solutions, it is heartening to encounter so thoughtful and perceptive a technical discussion as "Heating Historic Structures" by Robert H. Emerick.

In restoring historically significant buildings so that they may be deeply expressive of their epoch and their significant occupants, or the great events which took place within their walls, the psychological validity of the results could readily be impaired through insensitive or obtrusive heating, lighting, or air-conditioning installations. In this respect, it is interesting to note that the general public is much more demanding than might have been surmised. And, of course, it is the public that finances such restorations and then makes continued support possible through increased attendance.

In our recently completed restoration of the oldest church of English foundation in this country and the nation's *only original* Gothic church, St. Luke's near Smithfield, Virginia, we were obliged to provide adequate heating to preserve the original 17th Century furnishings and the notable woodwork. Since the building is unique in this country, we felt required to locate the heating unit in an obscured position about a hundred yards away from the church, as an added fire precaution. In removing three later floors to return to the original level, we fortunately found it possible to install radiant coils beneath the square-brick paving, so that "visually" the source of heat is nonexistent.

The curator's house and gift shop in the church precinct are heated by a separate unit which (in our case) proved more economical, both as to possible heat-loss in lengthy transmission lines and to the fact that the house required more continuous heating than did the church.

The P/A article is of such definite interest that I would like to see it broadly available to all those involved in historic restorations.

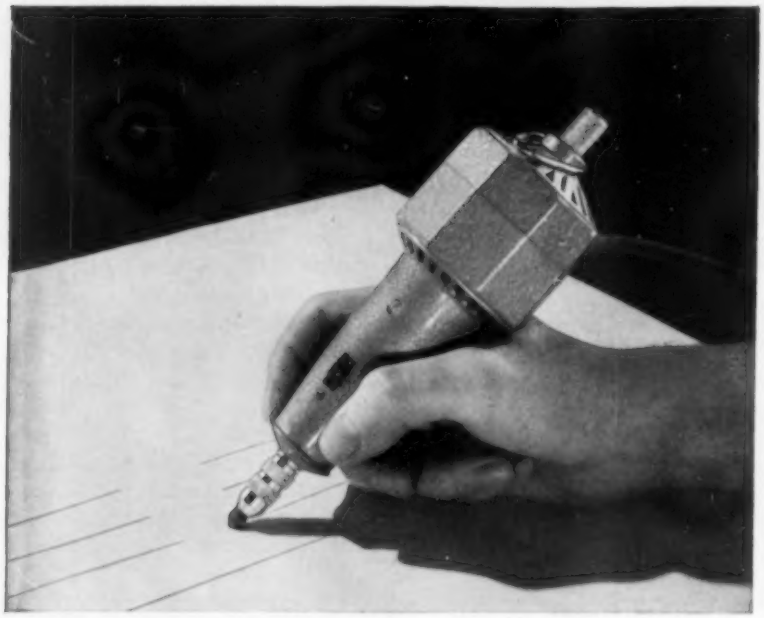
Prof. JAMES GROTE VANDERPOOL
Avery Library
Columbia University
New York, N. Y.

### our obscurantism

Readers puzzled by the opening page of Nicholas E. Chotas' article, "The Critic's Role in Esthetic Evaluation of Architecture" (JULY 1957 P/A) may be interested to learn that the Editors are just as mystified by the printed version of the manuscript, which clearly stated that the judgment of a relativist critic is based "upon a serious, *reasoned* discrimination between good and bad, or between better and worse"; then went on to discuss the obscure quality favored by the absolutist critic, particularly his criteria, with the

(Continued on page 14)

DRAFTING TRENDS



## New erasing machine for fast, clean, effortless erasures

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Using a Sovereign is just as easy as reaching for an old fashioned eraser . . . and much more convenient. Curved to fit the hand, it incorporates many design features of special appeal to engineers and draftsmen. For example, the hollow armature shaft takes a full 7" core eraser which feeds through an instantly adjustable chuck. The extra long eraser eliminates those frequent, annoying changes often associated with ordinary erasing machines using short erasers. (When a change is finally made, the chuck cuts replacement time to *less than 10 seconds.*)

The large loop hanger is ideal for hanging the Sovereign within easy reach of the board. Or, if the erasing machine is used frequently, the octagonal shape design permits the draftsman to lay it on the drawing board without fear of it rolling off.

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## p/a views

(Continued from page 13)

observation: "At the most, these *terms are only abstract designations of the thousands of individual, specific* criteria of 'beauty' . . ." (italicized portion inadvertently omitted from the published article. Sorry, Readers and Mr. Chotas!) C.M.

### behind the scenes

*Dear Editor:* As happens so often, those behind the scenes who are responsible for much of a project remain unrecognized.

This was the case with Charles A. Bradbury, Project Manager; John T Stewart, Project Designer; and Al Ragone, Field Superintendent, who literally lived with the planning and designing of the half-million sq ft of interior space of Socony Mobil headquarters building (INTERIOR DESIGN DATA in JUNE 1957 P/A).

Your treatment of the project was splendid. I am proud to add these names to the list of those credited.

J. GORDON CARR
J. Gordon Carr & Associates, Architects
New York, N. Y.

### the 5/16" curtain wall

*As we have received queries, protests, and from one reader a frank "I don't believe it," following a report of the remarkable 5/16"-thick laminated panel (both faces of porcelain enamel on aluminum, with a special asbestos-cement core) being used by Eero Saarinen & Associates for the IBM building now under construction in Rochester, Minn.* (P/A NEWS SURVEY, JUNE 1957 P/A), *John Dinkeloo, partner of that firm, has kindly offered additional information* (below) *about the panel's performance.*

The best answer to questions about the U-factor of .241 is to enclose a copy of the thermal transmission tests (*below*) run by an independent testing laboratory. Many have questioned this transmission (U) of the panel and one engineer, after

(Continued on page 16)

# The beauty of Crucible stainless steel is its long-lasting life and lustre

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**CRUCIBLE** first name in special purpose steels

## Crucible Steel Company of America

Canadian Distributor—Railway & Power Engineering Corp., Ltd.

(Continued from page 14)

seeing it, without anyone else's knowledge, had it tested by another laboratory, and was amazed that the results were almost identical.

A good point that has been made is that, even with an effective thermal panel, the thing that really counts is over-all wall performance. In developing this wall, our major concern was the over-all performance, plus the economics. The entire metal framework consists of a vertical aluminum mullion, every 4 ft, and the coping and sill. These members have been designed so that there is a thermal insulation material between the interior and exterior faces of the metal. The panel is held into the metal member by an integral, locking, neoprene gasket, which also has a comparatively low heat transmission.

It is a fact that insulation is inexpensive in this day and age, however the in-place cast and ways of using it in a true curtain wall are complex. Over and above all of this, the most interesting calculation we made was that in a fully air-conditioned building such as this, and considering the glass a necessity in any type of wall, the percentage of heat contributed by the panel portion in the cooling cycle (which is the biggest problem) is, by percentages, comparatively low. And using a different wall material would not alter these loads appreciably.

As we develop the curtain-wall type of construction, I am sure we will all be discovering amazing things. Our biggest problem, in this, is communication of results.

JOHN DINKELOO
Eero Saarinen & Associates
Bloomfield Hills, Mich.

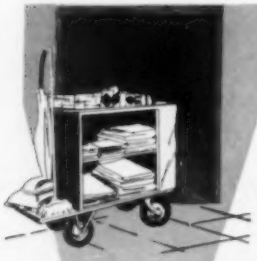
•

*The letter* (above) *was accompanied by a photostat of a report from J. L. Finck Laboratories, Brooklyn, N.Y., on tests of three 18"x18" panels: (1) Paper-honeycomb core between sheets of aluminum; both aluminum surfaces coated with porcelain enamel; average thickness of panel—0.990"; (2) Corrugated-asbestos core between sheets of aluminum; both aluminum surfaces coated with porcelain enamel; average thickness of panel—1.101"; and (3) Cement-asbestos core between sheets of aluminum; one surface bright aluminum metal and the other surface coated with porcelain enamel; average thickness—0.269". When tested in a guarded, flat, hot-plate apparatus, with thermal equilibrium established, results obtained were:* Thermal Transmittance (U) Btu/hr/ft²/ deg.F from air to air—(1) 0.255; (2) 0.267; and (3) **0.241.**

**the neoprene gasket**

*Dear Editor:* We read with great interest your article covering the glass

(Continued on page 19)

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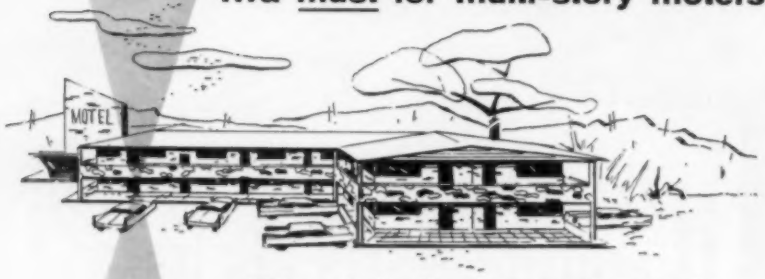
**Sedgwick Motel**
**"utility-lift"**
**...a must for multi-story motels**




High cost land and ranch-type construction make multi-level motels the rule rather than the exception. However, maintenance methods haven't caught up with the new trend...cleaning women are still lugging linen, heavy equipment and supplies up and down stairs.

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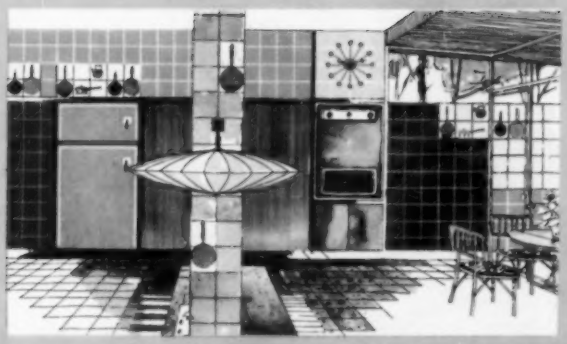

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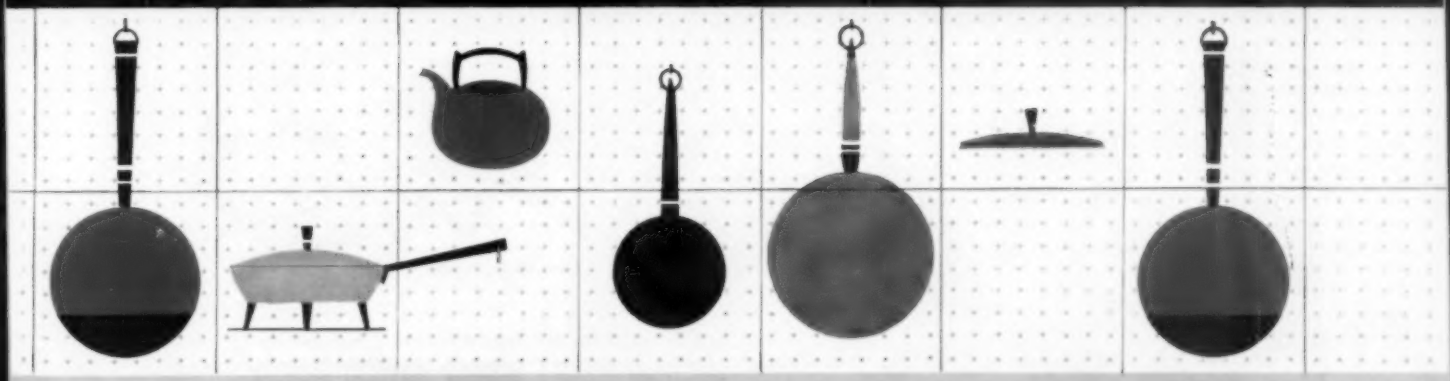

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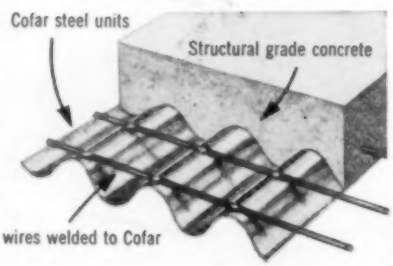


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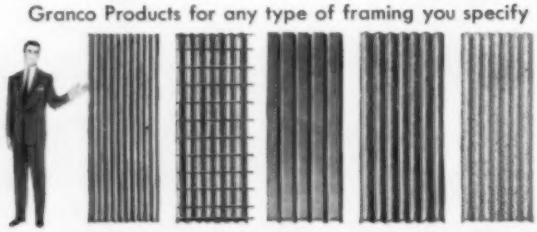


(Continued from page 16)

installation at Idlewild Air Terminal (P/A NEWS SURVEY, JUNE 1957 P/A. *The same gasket referred to in the letter from Dinkeloo, and previously used by Eero Saarinen & Associates at GM Technical Center).*

Some time ago, we installed glass under similar conditions and discovered that a channel was not too satisfactory unless the pressure along the rubber was continuous. Your detail shows a screw which, unless the extrusion is stiff enough, would not exert continuous pressure against the gasket.

Under a driving rain, we found the type of channel shown in the enclosed sketch to be more satisfactory than the gasket you have shown.

Quite frankly, because of the possibility of leaks at corners, we obtained a better job with General Mastic's Curtain Wall Compound #22 at the U. S. Naval Academy, than we could obtain with rubber gaskets.

Perhaps the gasket used at Idlewild is sealed at the corners and more elastic than the one we used in our unsuccessful attempts to cut down the cost of glazing.

STANLEY E. ARONOFF,
Vice-President
The Southern Plate Glass Co.
Baltimore, Md.

•

We designed the aluminum extrusions to allow a pressure stop to be taken up to a point in which a ¼" piece of glass would be sandwiched between two ⅛" layers of Neoprene in their compressed stage. Then we requested Pawling Rubber Co. to supply a sample of a Neoprene channel gasket of the softest Durometer hardness consistent with good extruding qualities and maximum resistance to aging. We glazed a sample of glass into a piece of the mullion and determined the screw spacing in the pressure stop which would maintain a seal at the midpoint between screws. In this particular instance, the screws were placed approximately 9" on center for a gasket wall thickness of 11/64".

The channel gaskets were supplied with vulcanized corners and of the proper size to fit each light of glass. They were snapped on the glass as it was removed from the packing case, protecting the edge during handling and installation. Thus, by requiring welded water-tight joints in aluminum frames and continuous gaskets of the proper size for each light of glass, we obtained a great deal of control over the quality of the glazing. The gaskets were trimmed with a scalpel after the installation of the stainless-steel mullion cover. In this way, a neat, flush weather surface was obtained.

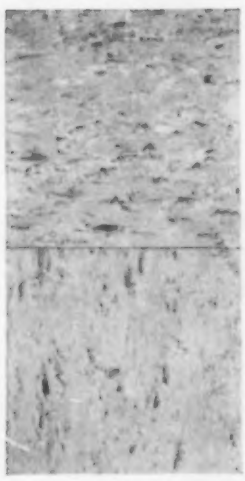
Of course, the final test is the installation itself. A great deal of the

(Continued on page 21)

*B. T. Babbitt Company offices keep*

*their executive look with superdense*

**B.F.Goodrich** *Rubber Floor Tile*



The makers of Bab-O and Glim used 16,000 square feet! B. F. Goodrich Rubber Floor Tile helps give offices the executive look, and helps them keep it! By an exclusive process, B. F. Goodrich compresses the tile in such a way that it has "superdensity." Dirt-catching pores are eliminated, and each tile has cleaner, truer colors, more polished perfection. Before writing specifications on important installations, we urge you to compare B. F. Goodrich Rubber Floor Tile with all others. See it, touch it. We are sure that you, like the officials of the B. T. Babbitt Company, will clearly detect the superiority of B. F. Goodrich Rubber Floor Tile. It's a product of B. F. Goodrich — "First in rubber."

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**FOR FURTHER INFORMATION:** See Sweet's or write B. F. Goodrich Flooring Co., a division of The B. F. Goodrich Company, Dept. PA-9, Watertown 72, Mass.

**New "Agatine" Tile • Koroseal Tile • Asphalt Tile • Rubber Cove Base • Stair Treads • Accessories**

(Continued from page 19)

glass has been installed for several months with no sign of water passing the gasket.

A. P. DEVITO
Skidmore, Owings & Merrill
New York, N. Y.

•

In addition to DeVito's discussion it should be pointed out that the use of corrugated-surfaces on both frame and stop permitted areas of extremely high pressure with a relatively low load.

R. H. BARTON
Elastomers Division
E. I. du Pont de Nemours & Company
New York, N. Y.

### for single system

*Dear Editor:* I want to thank John W. Foster for bringing to light the utter confusion caused in Architectural Offices by the "standard" filing system in use today (VIEWS, MAY 1957 P/A).

I think it is time for the various committees of the AIA and those who compile the *Sweet's File* to get together and try for once to make it easy for the small practicing architect. Information filed by the AIA system may as well be thrown in the trash. The *Sweet's File* is at least bound together and in one place.

The AIA filing system for "plates and articles" adds to the confusion by filing much technical information in a third place where it is sure to be forgotten.

Many small offices have already "junked" the AIA or "Blue Book" system and forgotten the "Red Book" system for plates and articles and technical information. In its place, various "make shift" systems, set up by building types, construction order or using *Sweet's* numbers, which was changed a few years ago, have been substituted.

Any one system incorporating the three existing ones would surely be a step in the right direction. It is time that the many organizations serving the profession got together and settled for once the difference used in filing and helped those trying to save the vast volume of printed matter coming into our offices. I know that the manufacturer's mailing out technical information would appreciate it if the literature was logically filed and not in File #13.

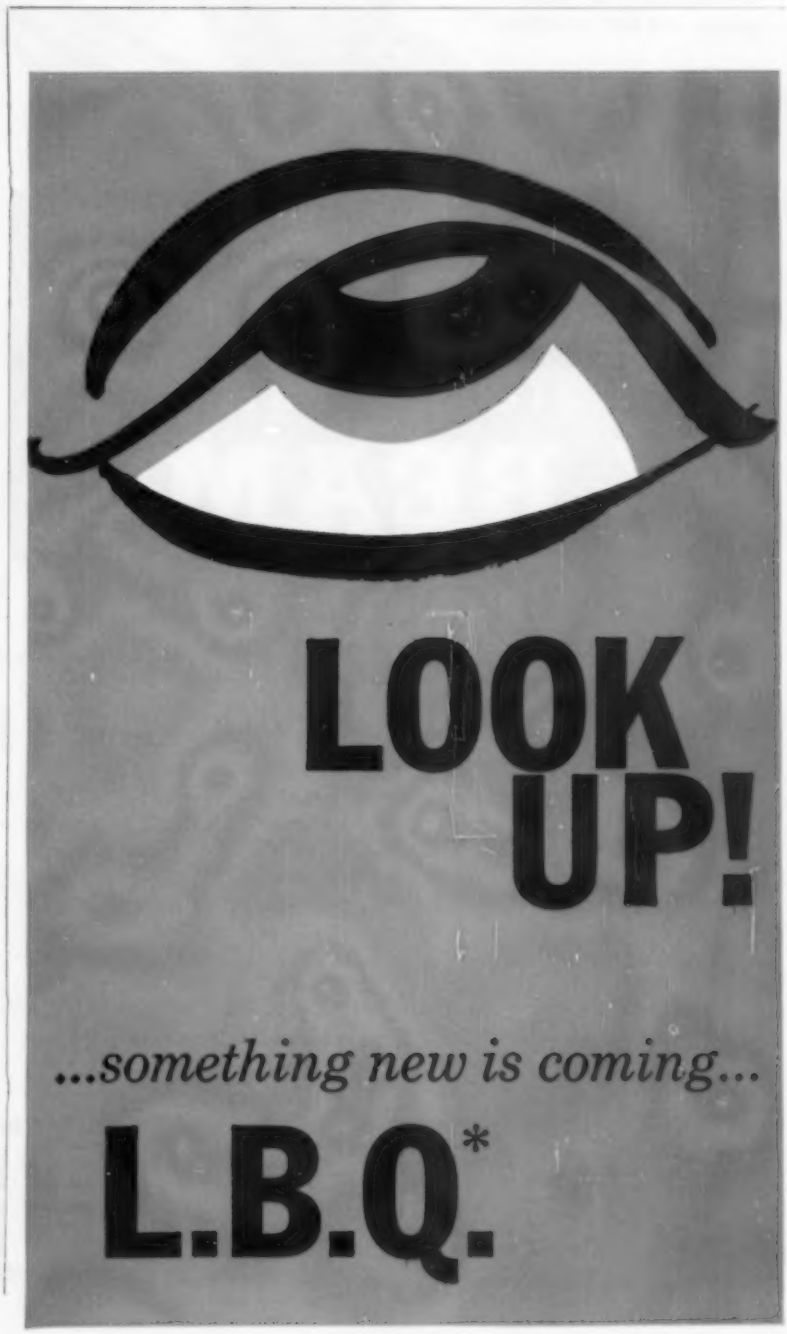
CLIFFORD A. NAHSER
Atlanta, Ga.

### how architects specify

*Dear Editor:* While waiting to see a specifications writer for a firm of architects, I picked up April 1957 PROGRESSIVE ARCHITECTURE and, with a great deal of interest, read Harold Rosen's article, "How Do You Specify and Approve Paint Material."

This is a subject near to my heart, since a good portion of my work has

(Continued on page 23)



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THIS LIST IS GROWING FAST

MACOMBER

# MACOMBER CANTON 1, OHIO

(Continued from page 21)

to do with paint specifications and I can vouch for the fact that there is a great deal of uncertainty on the part of the architect as to the best way to proceed.

By this time, you should have received statements from some of the architects and I thought you might be interested in looking at the problem as I see it to exist in Washington. I place the architects of this area in four classes:

1. The *"loose"* group
2. The *"moderately liberal"* group
3. The *"rigid"* group
4. The *"tight"* group

Thus defined, I can now give you an idea of how each group works up specifications.

The *"loose"* group simply states that "a nationally advertised brand" will be approved for use. This creates several immediate problems, beginning with the paint contractor's interpretation of what consitutes "a nationally advertised brand." His natural reaction, under any circumstances, is to buy the cheapest brand and, yet, meet the architect's qualification.

It is conceivable that a manufacturer who purchases one inch of space on a one-time proposition in any magazine which has some circulation can successfully defend his right to be considered nationally advertised. Should the paint contractor make such a submission, the architect is placed in the position of making the hairline decision and, in spite of the fact that he isn't getting exactly what he has in mind, would have to decide favorably. On the other hand, if the paint contractor submits a prominently advertised brand, showing an understanding of the architect's desires, no real problem comes up and approval follows without too much deliberation.

There is, however, another drawback when it comes to listing the type of product to be used on a specific surface. Since this group has started with a loose standard, this is all they can say:

*"EXTERIOR WOODWORK:* One coat of exterior house paint primer; two coats of exterior house paint."

Most paint manufacturers produce a standard, shelf-line of goods which represents their highest quality. In addition, because the trade and competition forces them into it, they also make a "painter's" or a second grade line. This second line is priced lower than the standard line and, coincidentally, is usually of a lesser quality. If the contractor is still working all the angles and has secured approval for a name brand, there is really nothing to prevent him from using the lower priced, lesser quality product. The architect hasn't been specific enough and has no recourse.

(Continued on page 25)

# There are 38 ways to CUT DEAD LOAD and get MAXIMUM FIRE PROTECTION with Permalite®

THE LARGEST-SELLING PERLITE AGGREGATE IN THE WORLD

38

Pound for pound, dollar for dollar, no other system of fireproofing surpasses the versatility of lightweight Permalite-aggregate plaster—a fact proved in many of the nationally known buildings erected during the past 10 years.

**WEIGHT**—In multi-story steel frame construction, with conventional fireproofing, more than 10% of the steel does nothing but hold up its own fireproofing! Permalite-aggregate plaster lets you cut this dead load. For example, the fireproofing weight on a typical column fire-protected with Permalite-aggregate plaster ranges from 38% to as little as 11% of the weight of conventional fireproofing—and still gains a full 4-hour fire-rating.

**FIRE RESISTANCE**—Permalite expanded perlite is completely inorganic—cannot burn or support combustion. Fireproofing constructions using perlite-aggregate plaster have been tested and approved by the Underwriters' Laboratories, by the National Bureau of Standards and by nationally famous universities and laboratories . . . methods approved, accepted and used from Massachusetts to California.

**BONUS FEATURES**—Since no expensive forms are required for fireproofing with Permalite-aggregate plaster, both days and dollars are saved. And finally, most important, the Permalite plaster fireproofing itself furnishes a perfect base for interior finishing and decorating.

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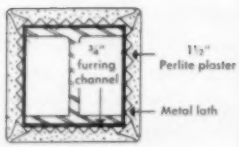
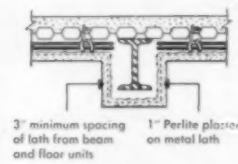
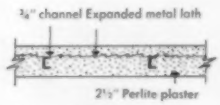



**Structural Steel Column**
*One of 11 approved methods*




**Typical Ceiling**
*One of 16 approved constructions*




**Wall or Partition**
*One of 11 different types*

The new 1958 Permalite plastering specifications and fireproofing data are now ready. While more than 50 perlite fireproofing systems have building code approval, only the 38 most economical are listed.

*Write for your copy*

## p/a views

(Continued from page 23)

Obviously, this type of specification is fraught with loopholes. The architect can count on spending a lot of time talking or exchanging correspondence (time which can be used in a much better way) before he can settle on a brand.

"The *moderately liberal*" group is devoted to the words "or equal" whenever a product is mentioned by name. This can be attributed to these architects' serious intent to be fair to all manufacturers. By using "or equal," no one can accuse them of bias or prejudice. Their specifications will designate one, two, or a dozen products by brand name, followed by the words "or equal." Now that a brand has been named, one can be a little more specific in the subsequent listings. For example:

> "*EXTERIOR WOODWORK:* One coat, Joe Doakes Company, A-1, primer; Two coats, Joe Do kes Company, A-1, house paint."

The "painter's" line has been eliminated and a standard of quality has been set. The paint contractor's attitude is unchanged. He is still going to shop around for the best prices and "or equal" is going to be his wedge. It begins with the contractor's request for approval of a product not mentioned by name and is usually accompanied with a statement that the contractor considers it the equal of the other brands named. That could very well be a statement of fact but any architect who checks through his correspondence files will see that in about 90 percent of the cases, a reasonable doubt exists.

Once again, the architect has to turn judge and, since he wants to be fair, he is obligated to spend time discussing the matter with the contractor and factory representatives. These sessions again represent lost time. Even after such discussions, the decision is difficult because the architect simply does not possess the technical and practical knowledge necessary for him to make a scientific comparative analysis.

To refer the matter to an independent testing laboratory is costly and impractical. Often, the architect will turn to a manufacturer's representative whose honesty and integrity he respects and put the question to him. The cat is now on the salesman's back, for the man so queried is obligated to give an honest answer. It isn't cricket to knock another man's product nor can any self-respecting salesman admit that anyone makes a product that's better than the one he's selling. Yet, he must answer truthfully, one way or the other, in order to keep the architect's confidence. So, the "moderately liberal" group also offers an invitation to controversy!

The "*rigid*" group generally uses

(Continued on page 250)

# NEW ADJUSTABLE DOOR STOP

NO. 3900
*(Was 3504)*

- Turret floor strike instantly changes from HOLDER to STOP.
- Strike contour rounded . . . prevents damage to polishing and scrubbing heads of cleaning machines.
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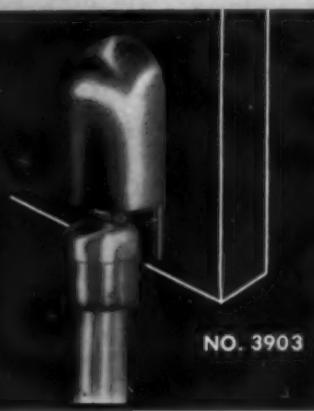
- Body is "KID-PROOFED"—rounded contours and concealed screws.
- Made of solid corrosion-resistant cast bronze.

No. 3903 Holder-stop is identical to 3900 except turret head is mounted on extra heavy steel pipe. When used on door swinging over steps, pipe is set in concrete.



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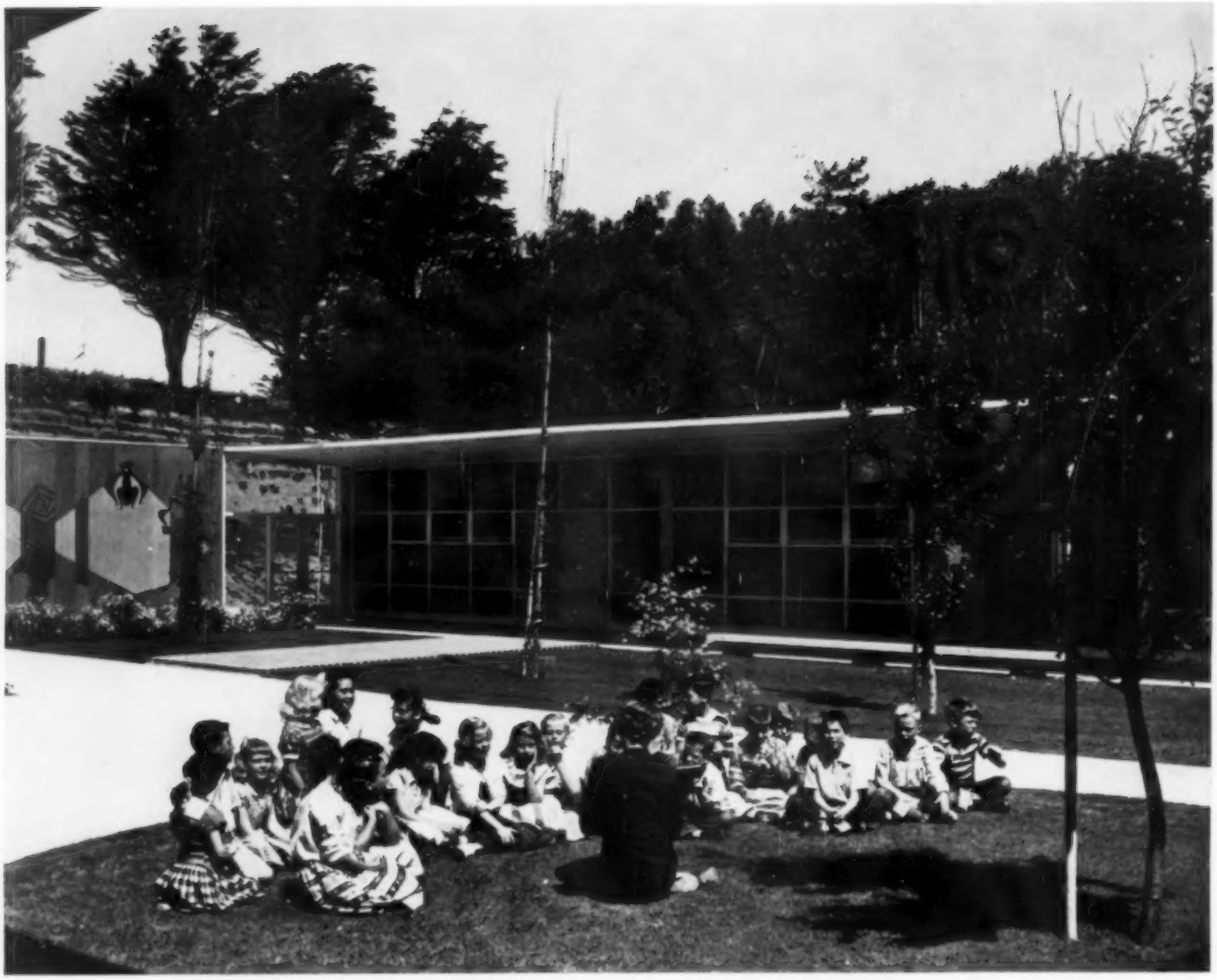

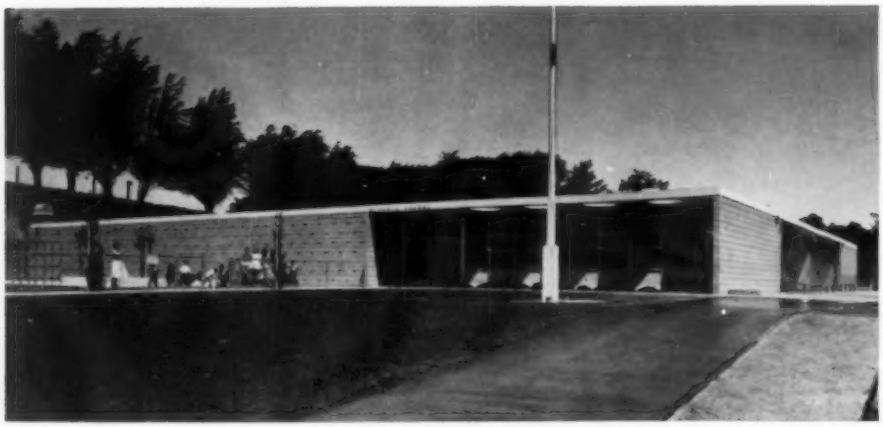

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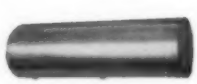

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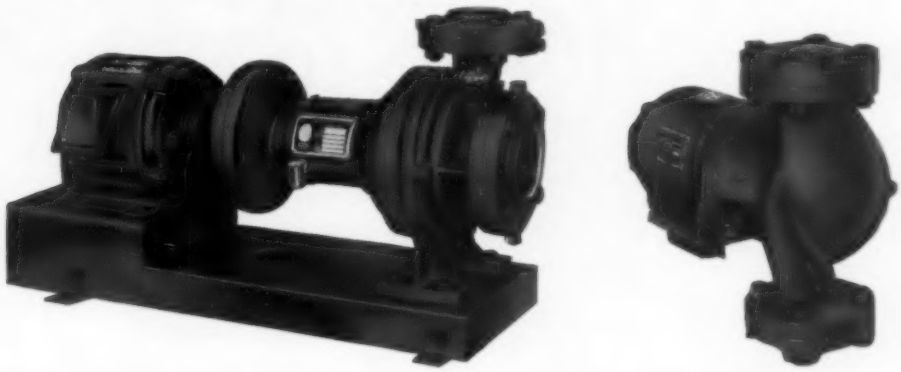
In its line of Booster and Universal Pumps, B&G has developed units in which *silent, vibrationless* operation is an outstanding feature. They meet, in every detail, the most exacting demands of good heating and cooling system engineering.



## B&G *HYDRO-FLO* CIRCULATING PUMPS

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The fact that over 2,000,000 B&G Boosters are in operation today is ample evidence that their quality has never been challenged. These in-line pumps are distinguished by specially designed, *quiet* motors and numerous other exclusive features which assure years of dependable service. They are used in smaller installations and in the secondary pumping circuits of large systems.

### B&G Universal Pumps

For larger installations, the B&G Universal Pump offers many exclusive advantages.

1. **Extra quiet motor.** Specially constructed, tested and hand-picked for extra-quiet operation.
2. **Sleeve bearings.** Both motor and pump are equipped with oil lubricated sleeve bearings—essential to silent operation and long life.
3. **Motor mounting.** Universal motors, through 5 HP, are NEMA mounted and completely suspended in rubber.
4. **Coupler.** Self-aligning, spring-type...another warranty of silent operation, plus protection against stresses of starting torque.
5. **Shaft.** Oversized—affording large bearing surfaces. Made of special alloy polished steel. Heat-treated integral thrust collar absorbs end-thrust...lengthens seal and motor bearing life.
6. **Lubrication.** Genuine oil circulating—no grease to channel or harden.
7. **Vertical split case—removable bearing frame.** Entire bearing frame assembly with impeller is easily removed from volute. No pipe connections to break or motor to remove—all the advantages of split case design.
8. **"Remite" mechanical seal.** Positively prevents water leakage up to full design pressures. The seal is self-lubricating and features a floating seat of diamond-hard "Remite"—a B&G development.
9. **Hydraulically balanced impeller.** Balancing chamber and thrust pressure relief holes in the impeller reduce thrust to a minimum.

For these reasons, you can specify B&G Circulating Pumps with full confidence in their performance.

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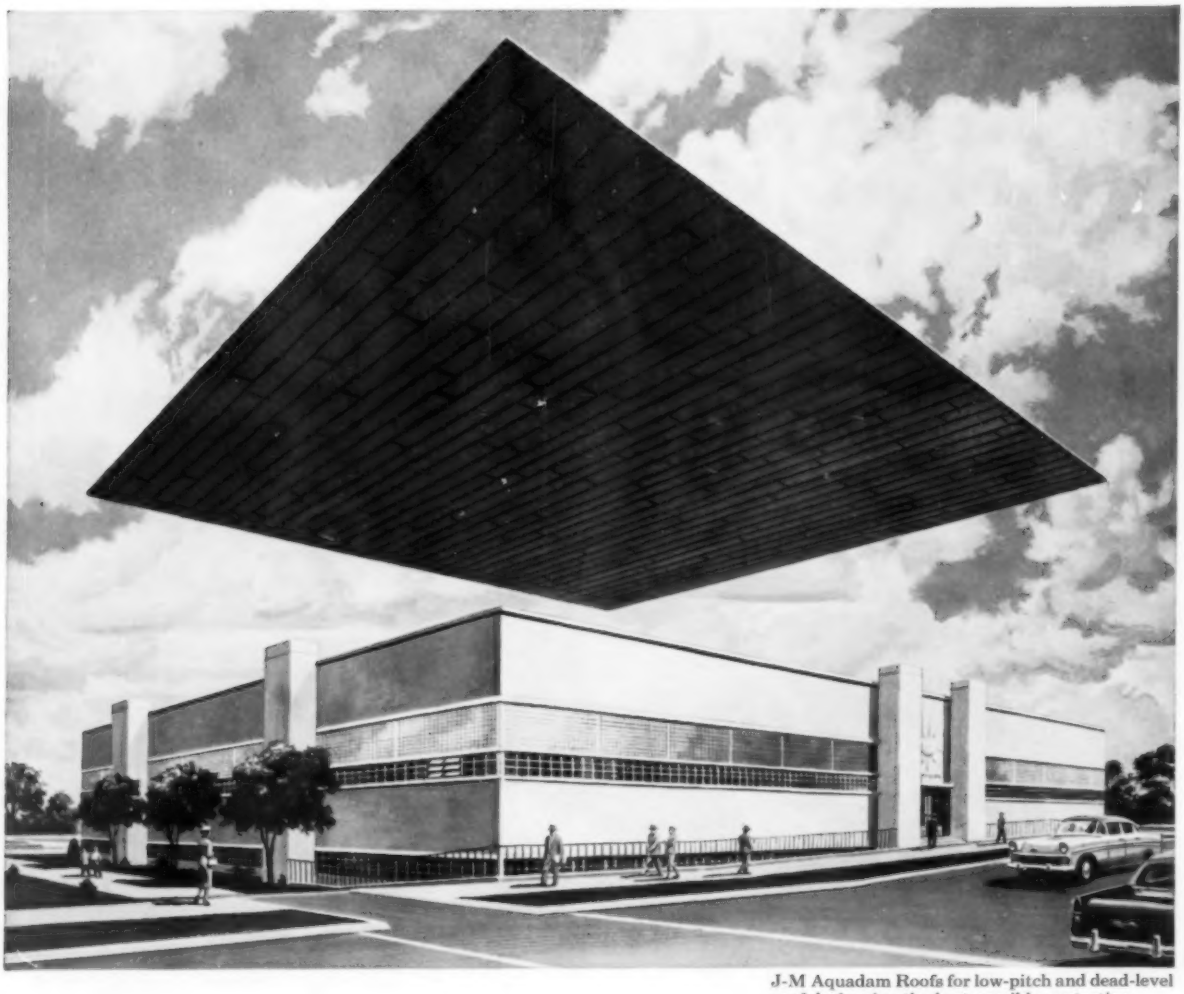

J-M Aquadam Roofs for low-pitch and dead-level roof decks give the best possible protection.

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J-M Aquadam Roofs owe their superiority to Aquadam, the modern cementing agent used in the application of the roofing felts. Aquadam, by laboratory test and years of actual performance, is considered the best dead-level bitumen on the market today. It is designed to encompass the best features of coal tar pitch and of asphalt without their weaknesses.

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*Suburban Park Elementary School, Norfolk, Virginia. Architects—Oliver and Smith*

*Cost of Cleaning*
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| Glazed Ceramic Tile | 6¢ |
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*SOURCE: Modern Sanitation Magazine*

## The School Board Demanded Modern Design —But Insisted on Economy... Ceramic Tile Gave Both

Tremendous progress in creative school design has kept pace with rapid advances in educational theories and practices. School boards are demanding physical designs which fulfill these theories—and fit their budgets. Here's how ceramic tile is contributing to modern school design and budget needs.

Take the Suburban Park Elementary School in Norfolk, Virginia. Designed by Oliver and Smith, it was built at a cost of $10.62 a square foot—a figure at the lower end of the national square foot school building cost scale.

Fitting in with the need for economy, Oliver and Smith used a new, approved method of ceramic tile installation. They specified tile installed by the newly developed thin-set method—*directly on cinder block*. The resulting economies permitted extensive use of tile in corridors, washrooms, cafeteria and the gymnasium.

Besides the obvious benefits of durability, beauty and design scope (aided by a size gamut from one-inch to foot-square and larger units), tile gave this school a lifetime of maintenance-free economy in key areas. Just how much this means is brought home graphically in the chart based on statistics from Modern Sanitation Magazine.

Whether your next project is institutional, commercial or residential, be sure to consider the durability, design and economy factors of modern ceramic tile installations.

*The Modern Style is* CERAMIC tile

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†Pat. Pending

THE ARCHITECTURAL LIGHTING DIVISION

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Your reservation at the ultramodern Philadelphia Sheraton is a reservation for comfort . . . the result of architects and engineers working together as a team to combine modern, functional beauty with traditional Sheraton luxury.

Typical of their teamwork is the air-conditioning system. John K. M. Pryke, consulting engineer, states, "In a planning session, we selected American Blower to supply air-conditioning equipment on the basis of their engineering reputation, and the way their equipment fitted our architect's plans. Then we called in American Blower for specific product information.

"An American-Standard Remotaire unit in each room allows guests to select the climate they want, and permitted architects to use the modern wall-of-glass exterior without fear of heat gains and losses.

"Two American Blower Tonrac® Centrifugal Refrigerating Machines supply chilled water for the entire system, and operate so quietly," Mr. Pryke concludes, "that guests on adjoining floors never hear a sound."

If you're planning to air-condition, call in an American Blower representative at the planning stage for complete product information. American Blower Division of American-Standard, Detroit 32, Michigan. In Canada: Canadian Sirocco products, Windsor, Ontario.

The new 22-story Sheraton Hotel. Architects: Perry, Shaw, Hepburn & Dean; Consulting Engineers: Slocum & Fuller; Builders: McCloskey & Co.; Mech. Contractors: Ambrose-Augusterfer Corp.

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**QUALITY PROTECTS YOUR INVESTMENT . . . AMERICAN-Standard**
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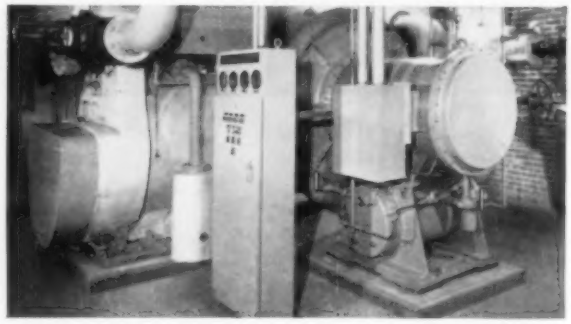
Sheraton's engineering team planning comfort. *L. to R.:* J. K. M. Pryke, consulting engineer; R. J. Augusterfer, mechanical contractor; H. B. Prewitt, American Blower; F. B. Mills, Sheraton Corp.; Exec. Vice President H. E. Barth, American Blower; J. C. McCloskey, Jr., McCloskey & Co.



Chilled water for the individual room units is supplied by two 350-ton American Blower Tonrac Centrifugal Refrigerating Machines installed in the fourth-floor master-control center. Tonracs operate quietly, automatically; won't disturb guests on adjoining floors.

## This is Terrazzo...
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available in Solid Vinyl, Vinyl Asbestos, Cushion-back Vinyl, Asphalt, Cork and Rubber Tile...over 150 decorator colors!

SPECIFICATIONS:

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THICKNESSES:
5/64", 1/8"

COLORS:
Regular -- 8
DeLuxe -- 7
Decorator -- 7

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## **Y**oungstown **S**teel **P**ipe for new Campus Service Building

This attractive new Service Building, parts of which are now under construction on the campus of Cleveland's John Carroll University, will contain a Gymnasium, Transportation Hall, Student Activities Center and a Student Dining Hall. To coordinate all the structure's physical functions, the University and its architect specified Youngstown Steel Pipe for its dependability and long life.

Youngstown Steel Pipe is made of only the highest quality steel by steelmen with over 56 years of pipemaking experience. All of Youngstown's fully integrated operations—from iron ore mining to finish pipe threading—are rigidly quality-controlled to provide the best steel pipe available anywhere. Why not make Youngstown your continuing specification for long life and trouble-free installations?

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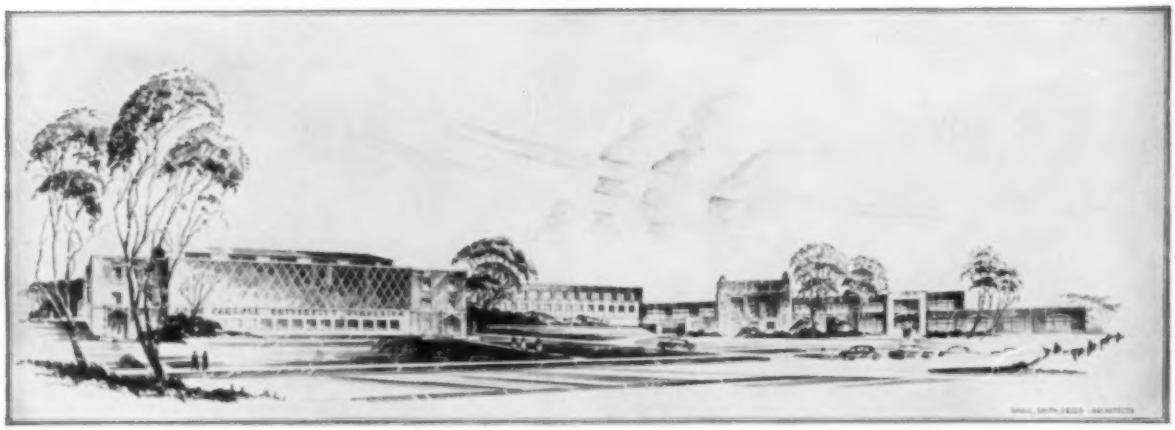

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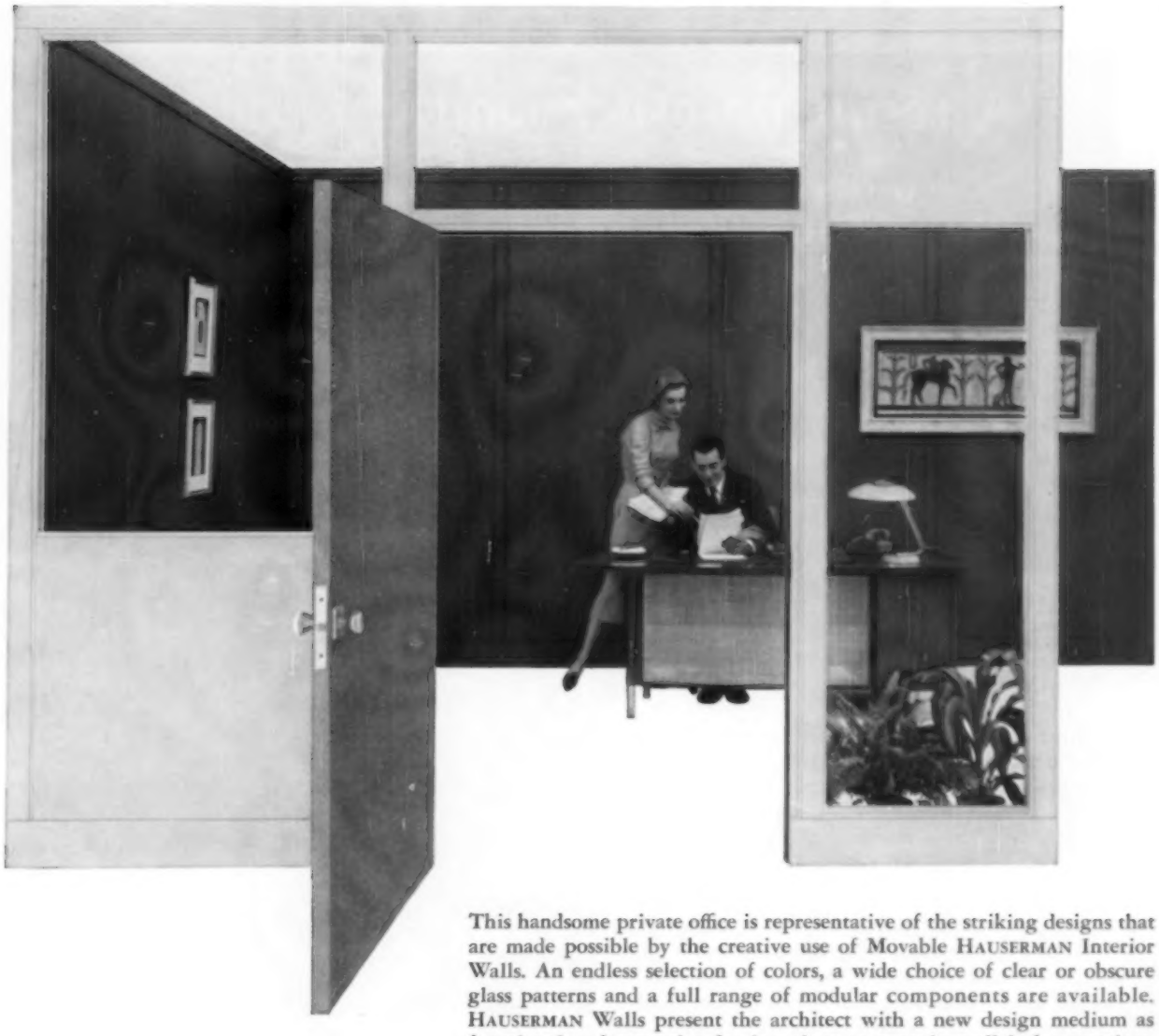

**the door is wide open for creative designing with**

# Movable Hauserman Interior Walls

This handsome private office is representative of the striking designs that are made possible by the creative use of Movable HAUSERMAN Interior Walls. An endless selection of colors, a wide choice of clear or obscure glass patterns and a full range of modular components are available. HAUSERMAN Walls present the architect with a new design medium as functional and attractive for interiors as curtain wall is for exteriors.

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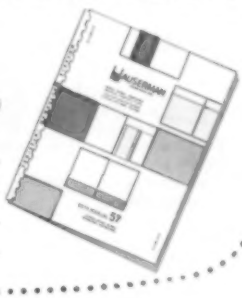

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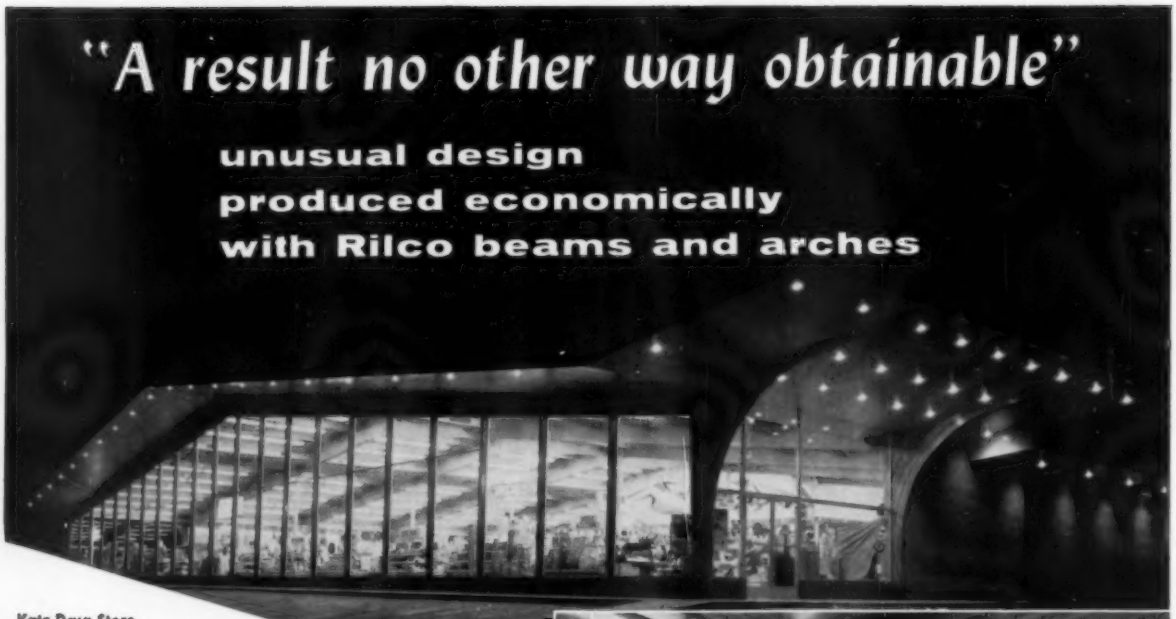
## unusual design produced economically with Rilco beams and arches



Katz Drug Store, Kirkwood, Missouri. Architects Kivett and Myers, Kansas City.

Rilco fire safe Laminated Beams are delivered on the job, machine finished, wrapped for protection.

"Although the economy was not the prime factor in the use of (Rilco Laminated Beams) it was, of course, a natural result and particularly welcomed when you thereby achieve a result no other way obtainable." The parentheses and underlining are ours, but the comment is direct from the user.

Often Rilco Glued Laminated Arches, Beams and Deck are selected because of their economy. In the case of the Katz Drug Store in Kirkwood, Missouri, however, they offered the architectural effect desired plus the warmth and beauty of wood — economy was a welcome *plus*.

You, too, will find that Rilco *welcome plus values* fit into many types of construction — churches, schools, industrial and commercial buildings. Fire safe, Rilco laminated wood members span large areas gracefully and economically.

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*Long, sturdy spans of duct work made of Wheeling Cop-R-Loy gives Carrier long-lasting economical service. It's easier to work, doesn't flake and eliminates waste...still more money-saving reasons!*

When Carrier Corporation, a leading air conditioning manufacturer, builds with Wheeling they go all the way . . . Wheeling Expanded Metal, Wheeling Tri-Rib Roof Deck, Wheeling SOFTITE Cop-R-Loy Galvanized Sheets.

For—like builders all over America—Carrier has found that Wheeling building products save time and give long life, dependable service and economical installation. You, too, can expect these features from every product in the Wheeling building line. That includes—Steelcrete Bank-vault Reinforcing, Metal Lath and Lath Accessories, Tri-Rib Steel Roof Deck, SOFTITE Cop-R-Loy Galvanized Sheets, Expanded Metal and ExM Gratings and Angle Frame Partitions.

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*This amazing, versatile metal saves money all along the line for Carrier. Used throughout the building, it protects plant personnel, protects moving parts and products, eliminates solid walls increasing ventilating efficiency.*

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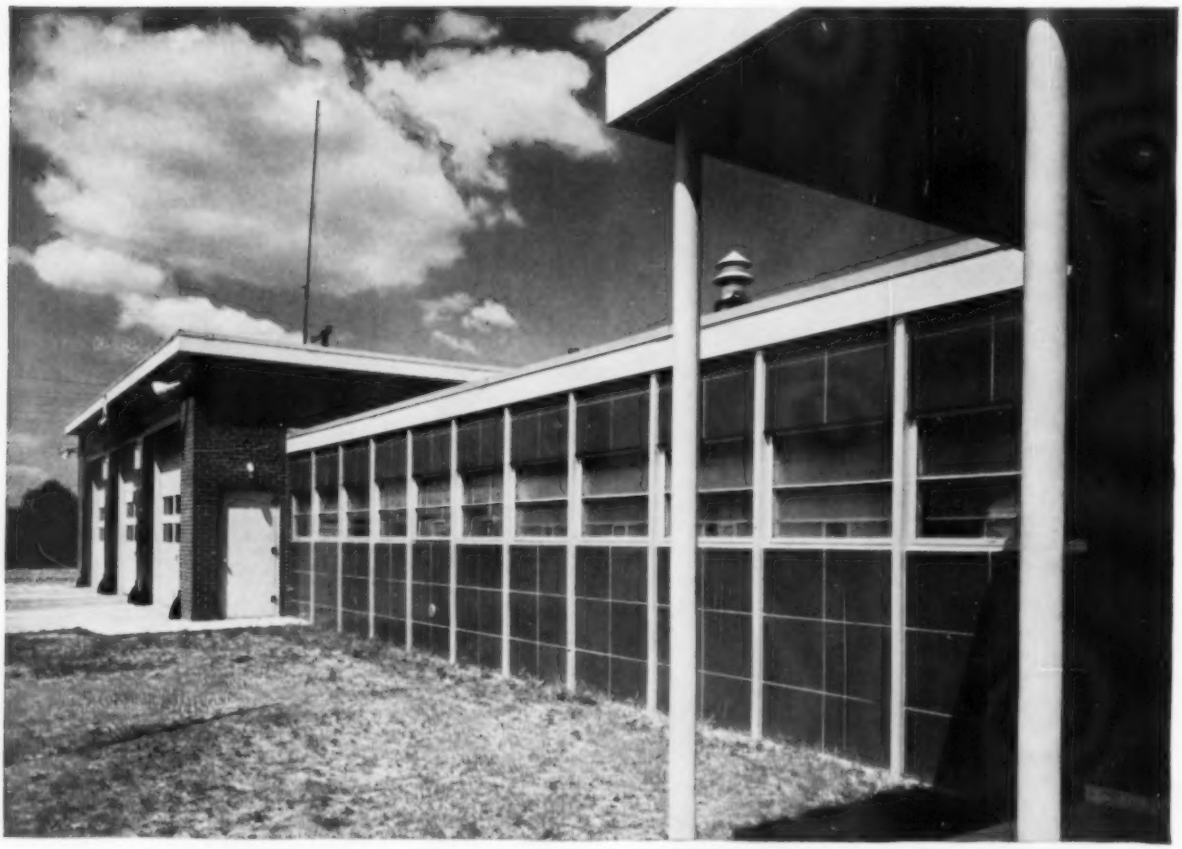
Don't let budget-imposed restrictions defeat your plans to design "community character" into fire houses, police stations, schools or other public service structures. At a price less than you'd expect, you can take advantage of Ceramic Veneer's unequalled plasticity of form, color and texture. Every unit, large or small, is custom-made by Federal Seaboard to your precise specifications, for interiors or exteriors, plain surfaces, sculpture or decorative panels. You can choose from a vast range of colors to achieve any desired effect. Soap-and-water washings will retain Ceramic Veneer's original richness and beauty indefinitely. If you have community service buildings now on your boards, write for latest data today. Without charge we will gladly furnish construction detail, data, color samples and advice on preliminary sketches involving use of Ceramic Veneer—the modern architectural terra cotta.



**HEADQUARTERS—FIRE HOUSE**
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**W. Thomas Schaardt**—*Architect*
**Stanley R. Benjamin**—*Builder*
1¼" Ceramic Veneer in marine green was specified for facing and coping. Facing units are 20" x 27".

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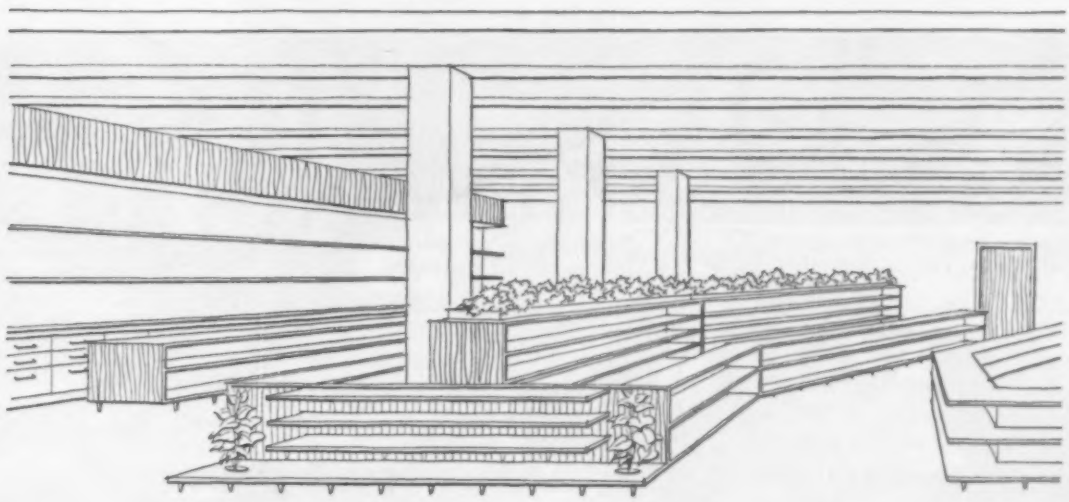

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**YOU can often make** your plans more acceptable to your clients by including a detailed color program.

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**For Additional information on COLOR DYNAMICS see Sweet's Architectural File, Section 14/PL**

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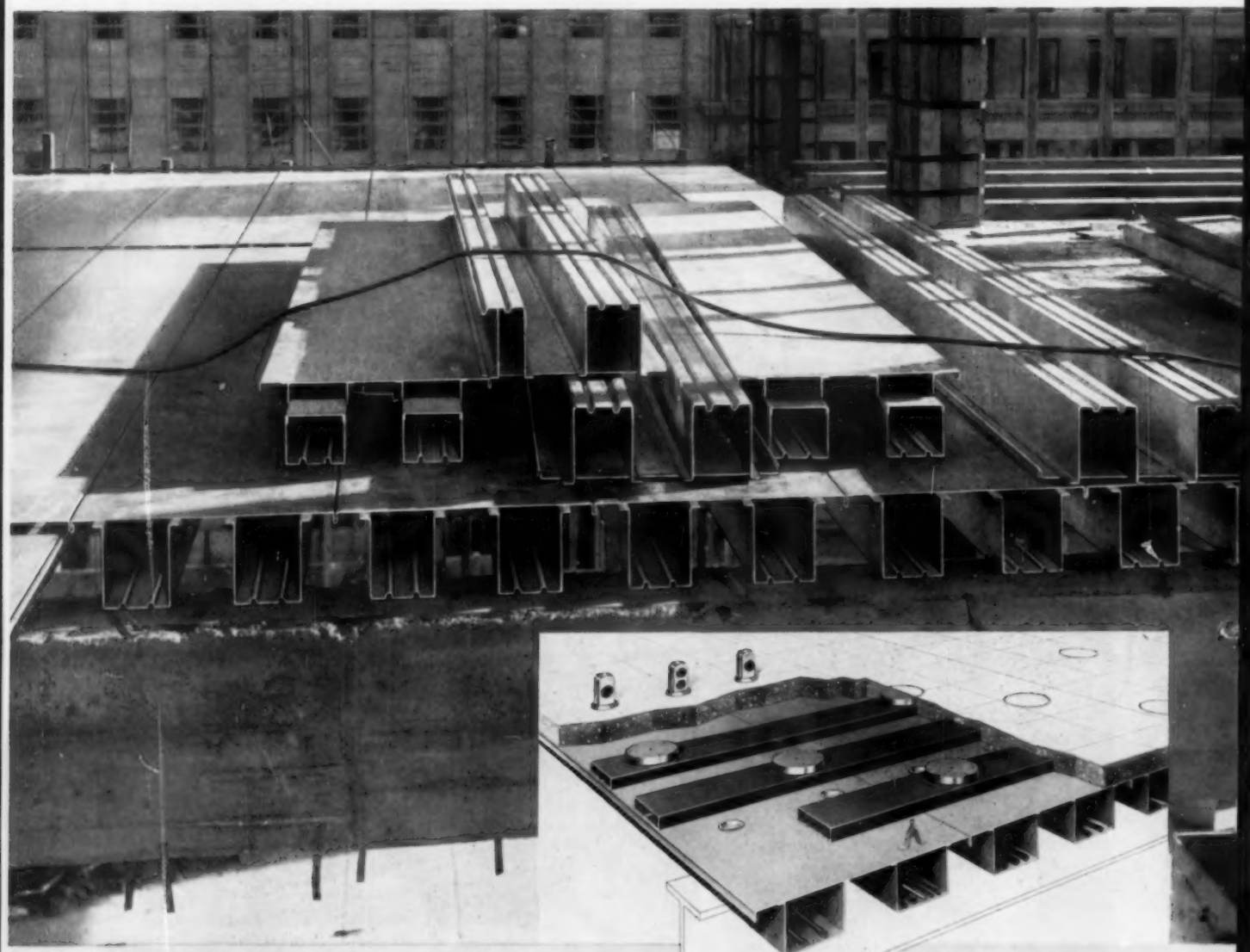
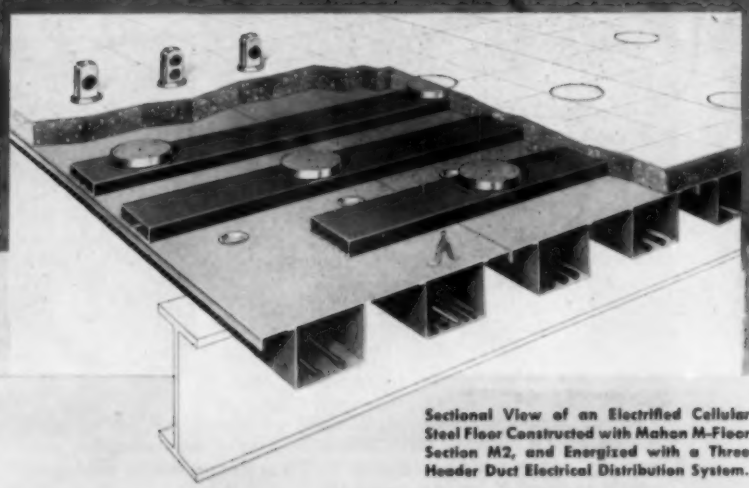
# M-FLOORS Provide Built-In



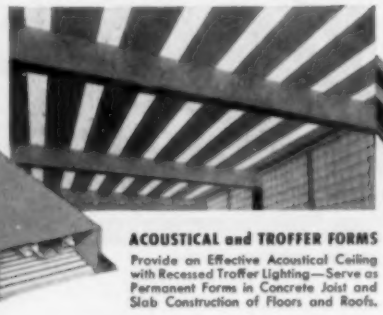
Above is a typical Mahon M-Floor Installation. It is One of Six Similarly Constructed Electrified, Cellular Steel Sub-Floors in the Ultramodern George Robert White Fund Office Building, Boston, Massachusetts. Owner: City of Boston. Thomas McDonough, Architect. John Bowen Company, Inc., General Contractors.



**Sectional View of an Electrified Cellular Steel Floor Constructed with Mahon M-Floor Section M2, and Energized with a Three Header Duct Electrical Distribution System.**

**LONG SPAN M-DECKS**

M-Decks Span from Wall to Wall or Truss to Truss—Provide Combined Structural Roof and Acoustical Ceiling. Recessed Troffer Lighting may also be included.



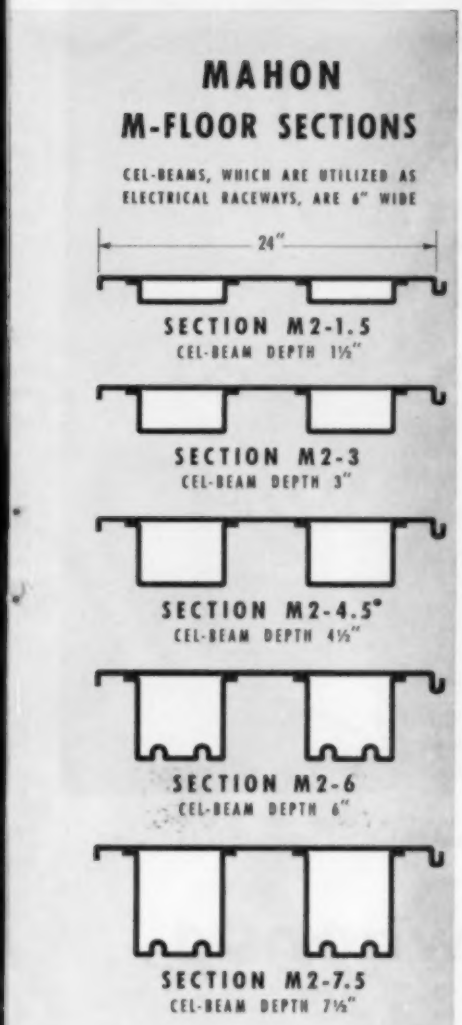
**ACOUSTICAL and TROFFER FORMS**

Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

**CONCRETE FLOOR FORMS**

Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

# Assurance Against Electrical Obsolescence in Another New, Modern Office Building!




In the multiple-story office building shown under construction at the left, deep Mahon M-Floor Sections were employed for the Electrified, Cellular Steel Sub-Floors which were designed for an unusual load of 250 lbs. per sq. ft. In selecting this particular Mahon M-Floor Section, the architect assured himself, and his client, that the building would have adequate underfloor raceway capacity to meet requirements of any type of occupancy, and that it would remain electrically competitive in the rental market throughout its entire life.

The 6" wide Cel-Beam Raceways in M-Floor construction provide further electrical advantages . . . they allow greater latitude in the location and installation of Floor Service Fittings, and they permit the use of 4" diameter Hand-holes between Header Duct Access Units and the Cel-Beam Raceways. This is important . . . the larger access hand-holes save time and labor costs, not only in the initial electrical installation, but year after year, whenever changes in electrical circuits are required or additional circuits become necessary.

In the M-Floor Cel-Beam Section you get a better balanced, more efficient structural unit . . . you get electrical availability in every square foot of floor surface . . . you get greater raceway capacity, greater latitude in location of floor service fittings, and greater convenience, electrically, for the life of the building.

When you select a Cellular Steel Sub-Floor for your next building, you will want all of the structural and electrical advantages that have been engineered into Mahon M-Floors. Comparison will convince you that the basic functional requisites of a Cellular Steel Sub-Floor are more fully realized in the design of Mahon M-Floor Cel-Beam Sections.

*See Sweet's Files for information, or write for Catalogue M-57.*

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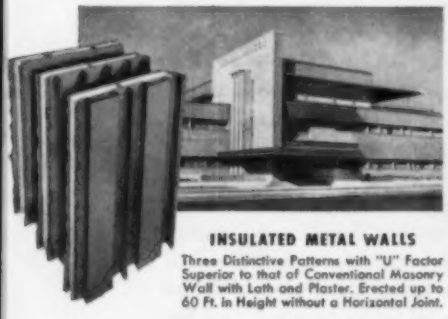
# M A H O N



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Mahon Metaclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.

**ROLLING STEEL DOORS**
Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.

**These mechanics** are installing an Armstrong Minatone Ceiling under ideal job conditions. Electrical work has been located, and the building is thoroughly dry.

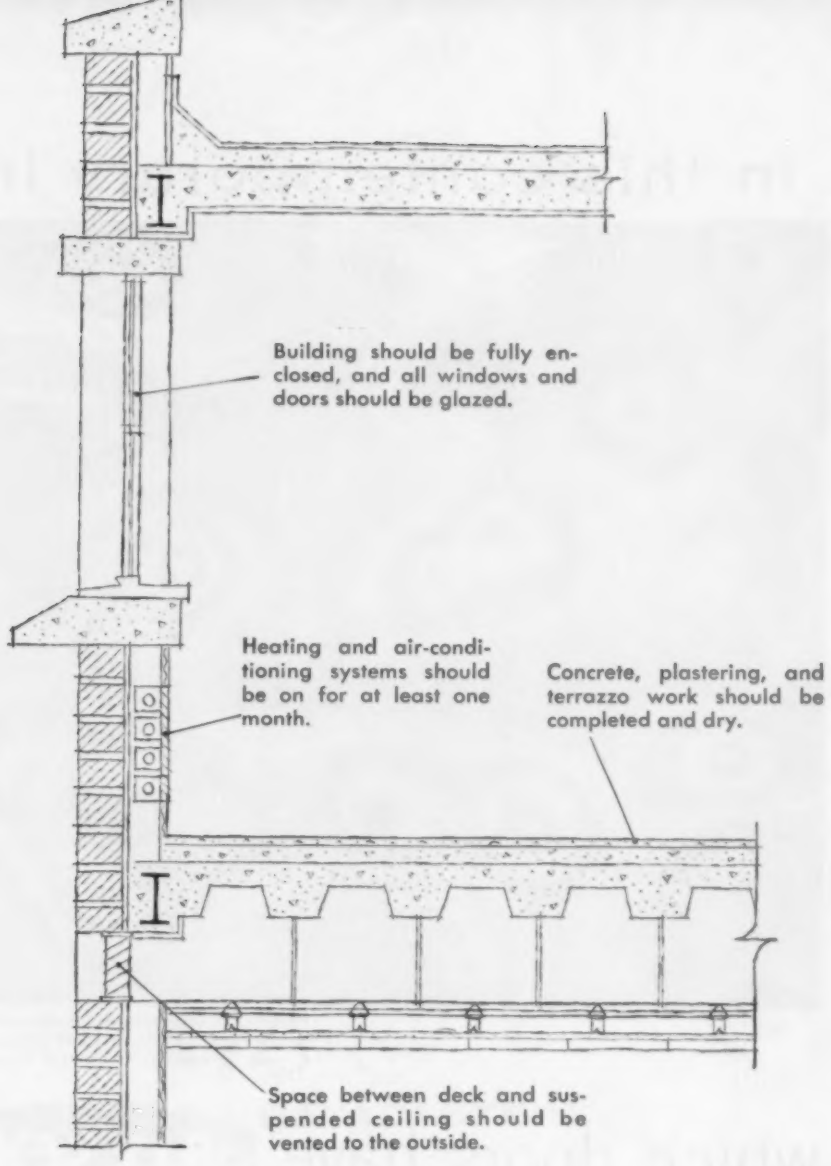
# How to determine when to

Selecting the right time to install acoustical ceilings may often mean the difference between an attractive or an unattractive finished job.

Frequently, the acoustical contractor is ordered to go ahead with the ceiling installation just after masonry work has been completed or even while the building is still partially open. Under these conditions, mineral or fiber composition tile that is exposed to excessively humid conditions absorbs some moisture and may expand. When air conditioning or heating is turned on to make the building ready for occupancy, a great deal of the moisture is removed from the interior. This change in humidity conditions may cause tiles to contract and result in an unsatisfactory appearance.

The Acoustical Materials Association considers acoustical ceilings to be in the same category as other fine interior finish materials. They recommend that the ceilings be installed under the same interior conditions that will exist when the building is occupied.

According to the Acoustical Materials Association, the best time to install acoustical ceilings is after the building is fully enclosed and the heating or air-conditioning system has been in operation for at least one month. All "wet operations" such as plastering, concrete, and terrazzo work should be complete and dry. Windows and doors should be in and glazed. If the acoustical ceiling is suspended from floor slabs or roof deck, the space between the deck or slab and the ceiling should be vented to the outside. And, for


Building should be fully enclosed, and all windows and doors should be glazed.
Heating and air-conditioning systems should be on for at least one month.
Concrete, plastering, and terrazzo work should be completed and dry.
Space between deck and suspended ceiling should be vented to the outside.

# begin acoustical installation

best results, acoustical materials should be delivered to the job just prior to installation.

To assure the most satisfactory results from the standpoint of appearance and acoustical efficiency, most architects insist that acoustical ceiling installations rigidly comply with these basic job conditions.

For detailed information on recommended installation procedures or data on any of the complete line of Armstrong Acoustical Ceilings, see your Armstrong Acoustical Contractor. He'll be glad to assist you with any ceiling problem. You'll find him listed in the Yellow Pages of your phone directory.

For a free, illustrated booklet on the latest sound-conditioning methods and materials, write to Armstrong Cork Co., 4209 Watson St., Lancaster, Pa.

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# in this contemporary interior...

Neutrality of walls, doors, floors and ceiling is preserved by unobtrusive uniform hanging for all doors in the extensive executive suite of the Natural Gas Pipeline Company of America. — Naess & Murphy, architects and engineers, Chicago

# which doors have RIXSON closers?

Entrance door, left, has Rixson no. 20 concealed floor type closer. Communicating office door, right, is equipped with a Rixson Uni-check concealed floor type closer. Inactive wardrobe doors, center, have no closers; but are hung on Rixson no. 117 offset pivot sets. All doors have identical hanging style, achieving a pleasing simplicity.

No exposed mechanisms or unsightly arms mar the appearance of these beautiful modern doorways, even when doors are open. Extra-length spindles are provided to clear thick rug installations.

Matched hanging styles can also be achieved with Rixson center hung installations.

*write for condensed catalog 18e*

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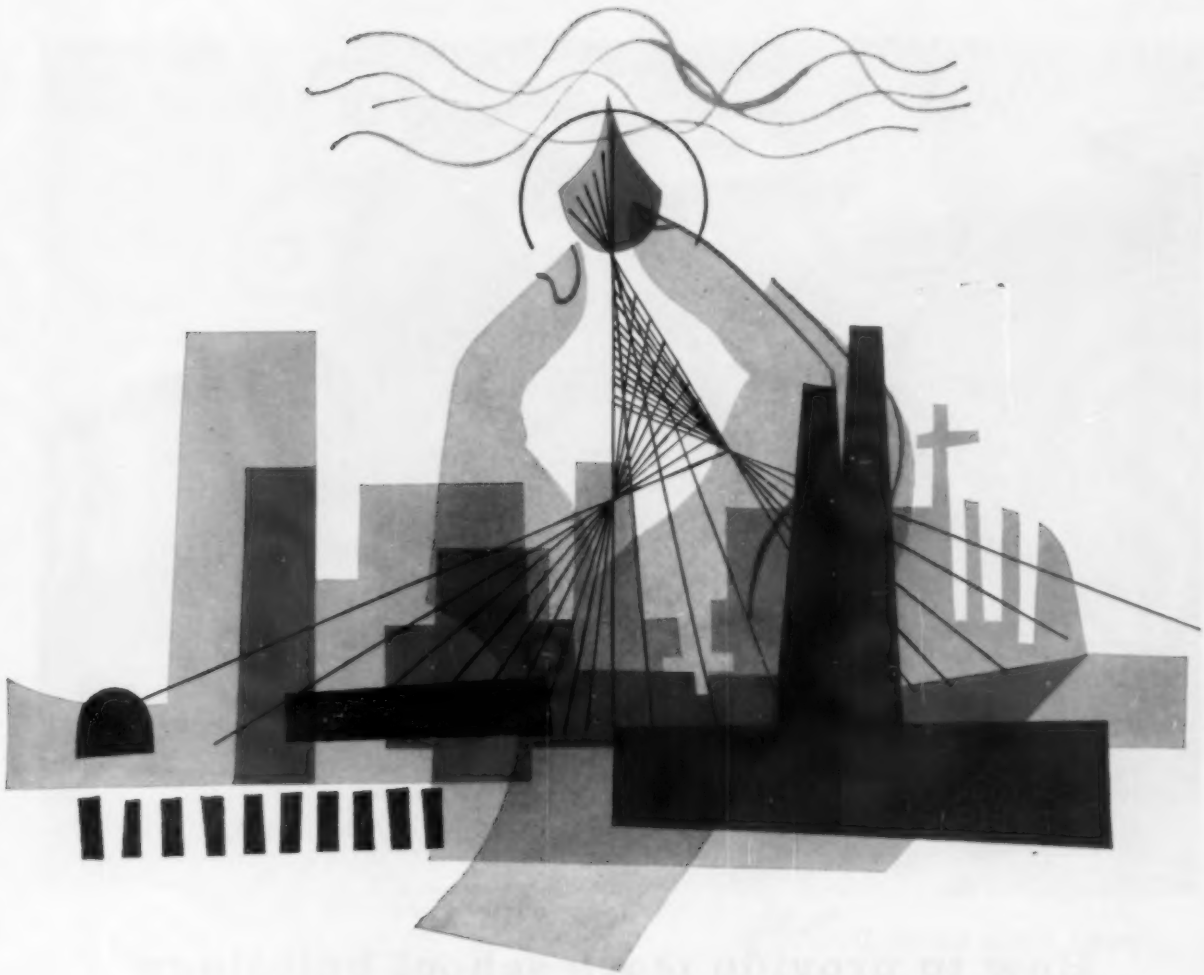
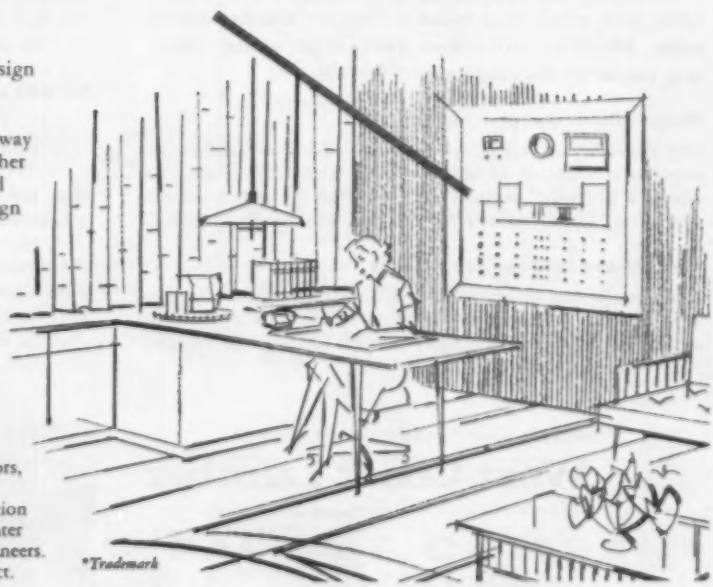


## SUPERVISORY DATACENTER*

### *First step toward centralized automation in buildings*

NEW IDEAS of major significance to building design are rare indeed. The Supervisory DataCenter panel is perhaps one of these. For by completely centralizing air conditioning control, it points the way to similar economies in the integration of many other mechanical functions. Conception, placement and installation of the DataCenter involve creative design factors that are of first concern to the architect. Your local Honeywell man has full details.

*Minneapolis-Honeywell Regulator Company*



Rendering at right shows how a non-technical receptionist, even while taking calls and receiving visitors, can oversee comfort in a building when Supervisory DataCenter is installed. A similar installation is in operation at the Hillyard Chemical Co., St. Joseph, Mo. DataCenter there designed by: Turnbull-Novak, Inc., Consulting Engineers. Project supervised by Harlen E. Rathbun, AIA, Architect.

*Trademark

# How to provide more school buildings for the dollar

**Financing school buildings is a problem everywhere. To meet the challenge of quality at reasonable cost, more and more architects are designing safe, efficient, attractive schools of wood. Here are some of the reasons:**

***Wood allows design freedom***

The flexibility of wood construction allows a freedom of expression difficult to achieve with other materials. To obtain a practical, yet new and fresh design, architects are specifying wood for many of today's outstanding schools.

***Current and long range economy***

Long-established practices with wood construction can save time, labor costs and money. These savings are important, allowing you to provide more school for a given budget, take better care of future needs.

***Wood's relaxing atmosphere helps students***

Students adapt quickly, learn easily in schools of the same familiar wood construction they associate with the security of their own homes.

***Schools of wood are safe***

One-story schools, for which wood is easily the most practical material, do away with the "stampede" danger of the multi-floored buildings of the past. Fire danger, of course, does not stem from the structural material, but from the contents of the building.

*Be sure to consider wood for the homes you design. Take advantage of the versatility, beauty and economy of this ever-modern material. And . . . for strong, durable wood . . . specify West Coast Lumber . . . Douglas Fir, West Coast Hemlock, Western Red Cedar, Sitka Spruce.*

Today's better schools are built with

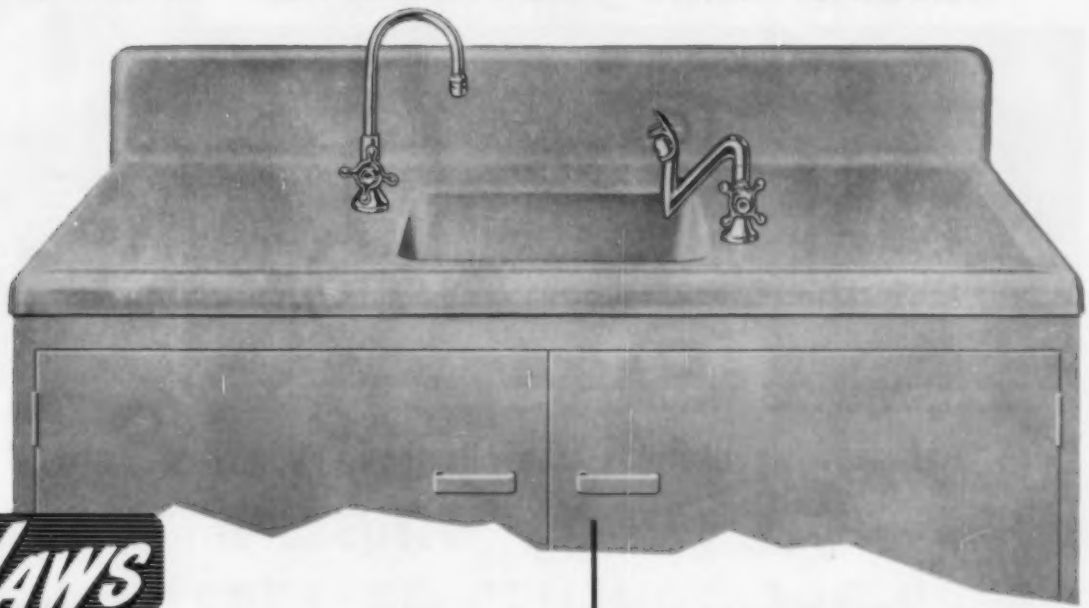
## West Coast Lumber

Douglas Fir
West Coast Hemlock
Western Red Cedar
Sitka Spruce

**SEND FOR FREE BOOKLETS**

These two colorful booklets, fully illustrated, give more information on the advantages of wood schools. Ask for as many copies as you need. Simply drop a card to: West Coast Lumbermen's Association, 1410 S. W. Morrison Street, Portland 5, Oregon.

# No Rim! One Piece! In Color!



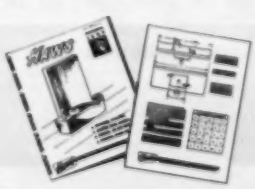
HAWS

## COMPLETE DECK-TOP, RECEPTOR AND FOUNTAIN ...IN *Fiberglass!*

**No rims! No complex forming! Screws easily onto prepared frame or cabinet!** Here is modern construction simplicity at its finest — furnishing greater sanitation and maintenance ease, too. There are **no cracks,** joints or crevices to interrupt water-flow from smooth deck-top into receptor, or to retain dirt and grime. The complete integral unit is smooth, rounded, one-piece molded fiberglass — in specially selected decorator colors!

**A great new idea for schools!** Ideal for classroom and laboratory installation, HAWS Series 2500 units are ACID RESISTANT and impervious to stains. They may be equipped with any combination of HAWS pantry and drinking faucets for versatile applications.

**4 and 6 foot lengths** are available, 24" deep. Any combination of backsplashes and/or endsplashes will be provided. Models are available to meet New York State or Detroit Code requirement of drinking fountain separate from receptor.



HAWS Model 2546-4 — Reinforced fiberglass, one-piece deck-top and receptor in color. HAWS Model 414A aerated gooseneck faucet at left, and Model 2N2 sanitary drinking faucet at right — both VANDAL PROOF mounted.

***Color*** **AT NO EXTRA COST;** choose from a selection of five decorator colors and white: Coral Accent, Yellow Mist, Pistachio (green), Cerulean (blue), and Gray Satin. A "spider-web" finish of a complementary color is available if specified. All colors are permanently bonded to fiberglass.

GET DETAILED SPEC SHEETS on HAWS Series 2500 fiberglass units. Mail the coupon today! Ask for HAWS new Catalog, too.

HAWS DRINKING FAUCET COMPANY
Fourth and Page Streets, Berkeley 10, California
☐ Please send me detailed specs on Series 2500 fiberglass units.
☐ I would also like a copy of the complete HAWS Catalog.

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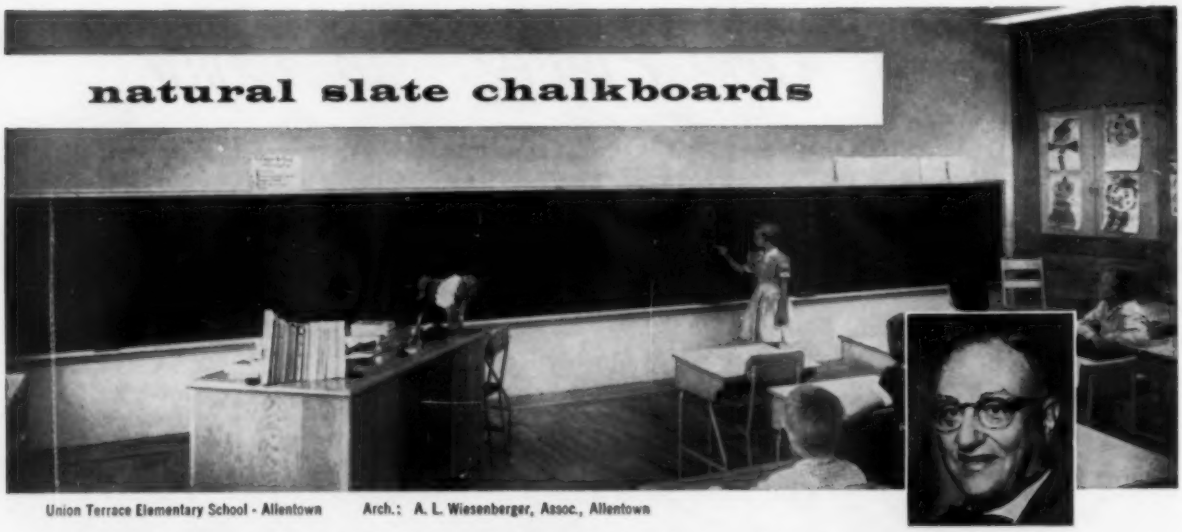
FIRM_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

**HAWS DRINKING FAUCET COMPANY**
**FOURTH AND PAGE STREETS (Since 1909) BERKELEY 10, CALIFORNIA**

# natural slate chalkboards



Union Terrace Elementary School - Allentown  Arch.: A. L. Wiesenberger, Assoc., Allentown

## "First and Only Choice of the Allentown, Pa. School District"

*. . . says Mr. Paul J. Fink, Assistant to the Superintendent of Schools*

Midway Manor Elementary School - Allentown
Arch.: Heyl-Bond-Miller, Allentown

Muhlenberg Elementary School Addition - Allentown
Arch.: Lange & Everett, Allentown

South Mountain Junior High School - Allentown
Arch.: Heyl-Bond-Miller, Allentown

Vocational Annex to Senior High School - Allentown
Arch.: George E. Yundt, Allentown

**"There is no substitute for the real thing! Nothing is easier on a child's eyes than the contrast of white chalk against a slate chalkboard. Words stand out crisp and clear . . . are quickly read by all."**

**"We have found Pennsylvania slate to be practically indestructible as we're still using some of the original slate boards in one of our recently renovated schools . . . boards installed when the school was built in 1886! After close to 70 years, these boards are still ably serving our students and teachers. What's more, they fit in perfectly with their new, modern surroundings. No wonder we are sold on slate and specify it in all our schools."**

**That's the feeling of Mr. Paul J. Fink of the Allentown School District. And the facts bear it out. Since 1950, this district has renovated or built additions to 7 elementary schools, built 2 new elementary schools and a junior high school, added a vocational annex to the senior high school, and construction is now under way for another new junior high school. In each case, natural slate chalkboards were specified.**

**Why not investigate slate chalkboards for your classrooms? You'll find for contrast, durability, easy maintenance . . . and timeless good looks . . . there is just no substitute for slate!**

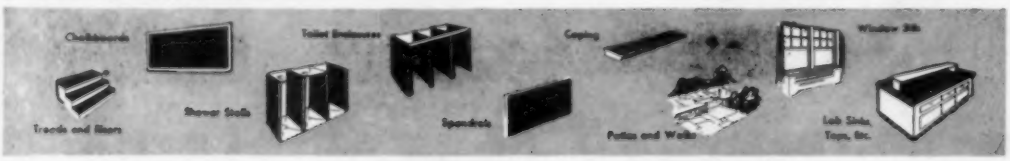
*Inquiries welcomed on specific properties of slate. Write:*

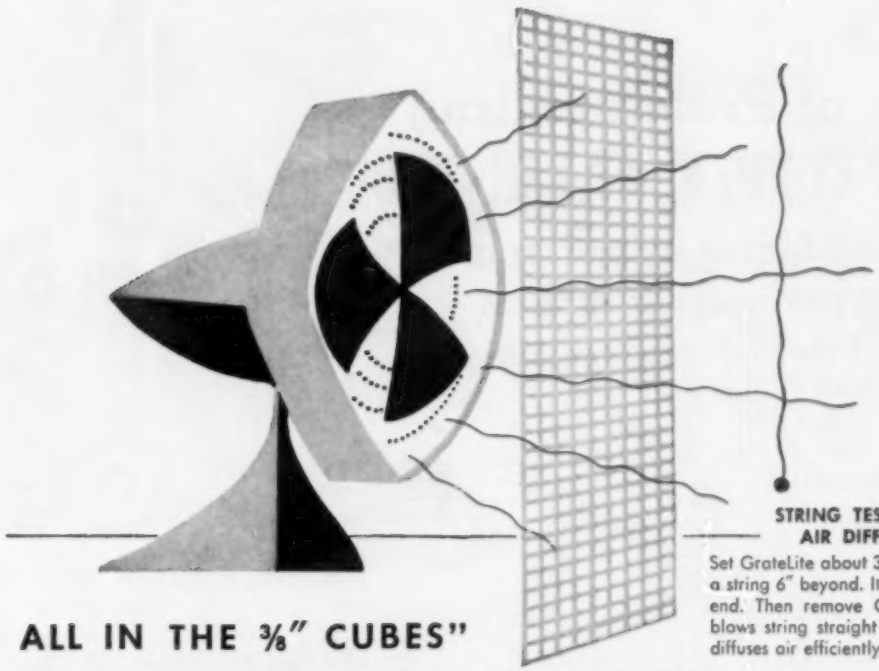
**NATURAL SLATE BLACKBOARD CO.**

**THE STRUCTURAL SLATE CO. - pen argyl, pennsylvania**

*for your protection, insist on slate quarried in Pennsylvania*

**natural slate...500 million years in the making**





**STRING TEST PROVES AIR DIFFUSION!**

Set GrateLite about 30" from a fan. Hold a string 6" beyond. It ripples from end to end. Then remove GrateLite—and fan blows string straight outward! GrateLite diffuses air efficiently.

"IT'S ALL IN THE ⅜" CUBES"

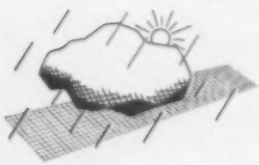
# GUTH GRATELITE CEILINGS ARE GREAT!

LOUVER DIFFUSER*

## SUPER-COMFORT LIGHTING PLUS AMAZING AIR DIFFUSION

**AIR CONDITIONERS USE ITS PRINCIPLE!**

Small GrateLite-type plastic cubicles are used on latest model air conditioners to diffuse air efficiently. GrateLite scatters—diffuses AIR!

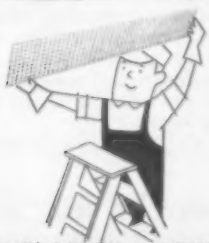


**UNAFFECTED BY HUMIDITY!**

GrateLite is one solid piece—not just glued-together pieces! It is dimensionally stable, and is unaffected by changes in humidity or by high humidity itself. GrateLite is a solid body!

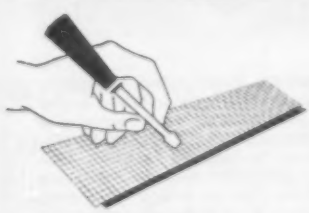
**TOUGH AND RUGGED!**

You can step on GrateLite... it won't mar, crumble or crunch. Its solid tapered vanes are Guth-engineered for maximum strength and ruggedness—important in maintenance!



**STANDS ROUGH HANDLING!**

GrateLite won't bend, buckle or mar when taken down for cleaning and relamping, etc. It won't twist in your hand. Its body and substance are designed for long use.



**SCRATCH-RESISTANT!**

GrateLite doesn't scar easily—or rip or break when dropped or struck by a tool. Fingernails can't mar its usefulness. No "black eyes," no damaged cubicles to destroy overall beauty and efficiency.

**KEEPS ITS BEAUTY!**

GrateLite holds shape when washed. Won't oxidize or blacken. Cubicles retain their shape. Scratches are unnoticeable. GrateLite isn't flat, dull or depressing. It's always cheerful, life-like and radiant.

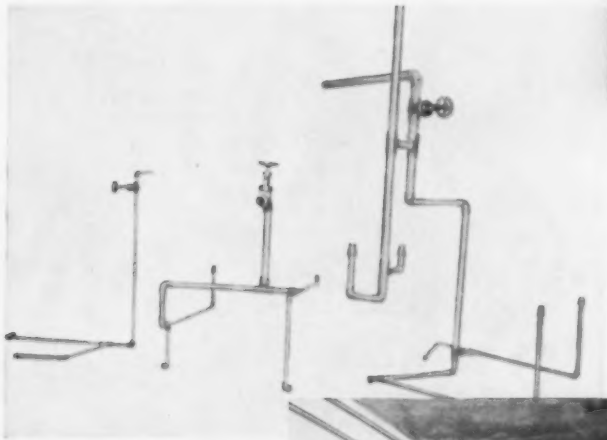
WRITE FOR DETAILS TODAY

**THE EDWIN F. GUTH CO.** **ST. LOUIS 3, MO.**

TRUSTED NAME IN LIGHTING SINCE 1902

* U. S. Pat. No. 2,745,001. Can. Pat. 1957, No. 538,245

# Ease of Prefabricating
# REVERE COPPER WATER TUBE
## a big factor in proving copper costs less than rustable material to install



**REVERE COPPER WATER TUBE** lends itself ideally to sub-assemblies like these. Except for the vent stack the three sub-assemblies shown make up the complete roughing-in for an entire bathroom. Solder fittings assured tight joints when handled and installed. Installation time was saved. Tube supplied by Revere Distributor, CRANE COMPANY, Dallas, Texas.

**CHILLED WATER CIRCULATING SYSTEM** of Revere Copper Water Tube showing expansion loops and risers which are carried out through the entire periphery of the building. All tube will eventually be insulated as shown. Note absence of joints when easy-to-bend Revere Copper Water Tube is used. It would have been necessary to cut 8 threads and make 8 fittings, in this one set of loops alone, had rustable pipe been used here.

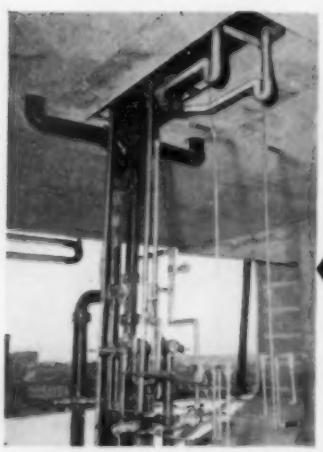


**PHOTO SHOWS** a complete roughing-in of two abutting baths, together with copper drainage lines from the two bathtubs in the bathroom above. Easier fabrication, less space requirements and the non-rusting qualities of copper are the reasons for using this material for these drainage lines on this job.

### THE STATLER HILTON HOTEL
**Dallas, Texas**

IN this newest Dallas hotel there were 60,000 lbs. of Revere Copper Water Tube in diameters ranging from ⅜" to 2½" used for hot and cold water plumbing lines and chilled water lines for air conditioning.

A most interesting feature of this installation was the various sub-assemblies used. (See upper left photo) According to Mr. Brown of the BROWN-OLDS COMPANY, mechanical contractors on the job, "The prefabrication of the sub-assemblies saved many hours of installation time, thus making a copper job cost less than rustable materials to install. But that's only *one* reason we prefer copper water tube. Not only is time saved with the solder fittings used, but you can work in the tight spots without worrying about wrench space. You are always sure of tight joints, and sub-assemblies can't work loose in handling. Then, of course, there is never any corrosion problem, so we always feel confident of doing a good job when we use copper water tube."

These same outstanding characteristics of Revere Copper Water Tube also make it the preferred material for radiant panel heating, underground service lines, drainage, waste and vent lines, oil burner and processing lines.

**REVERE COPPER AND BRASS INCORPORATED**
*Founded by Paul Revere in 1801*
230 Park Avenue, New York 17, N. Y.

COPPER ★ BRASS ★ 18 01 ★ REVERE ★ ALUMINUM

*Mills: Rome, N. Y.; Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities, Distributors Everywhere.*

**TRUE, TIGHT JOINTS** were obtained with Atlas Mortar cement in laying colored masonry units (8" x 12" x 3½") at McKinley Shopping Center, South Bend, Ind., according to masonry contractor Hugh M. Lee of Niles, Mich. General contractor, Paul Woodcox; Architect, Charles T. Donegan; both of South Bend.

## ATLAS® MORTAR cement stays plastic and workable... spreads easily with less effort

- Field results consistently confirm that Atlas Mortar cement produces excellent mortar workability and also gives high yields.
- This mortar workability helps masons to produce serviceable, watertight masonry walls.
- Quality-controlled manufacture of Atlas Mortar cement maintains high product standards and assures uniform performance and appearance, job after job. (Complies with ASTM & Federal Specifications.)

Write for your copy of "Build Better Masonry," Universal Atlas, 100 Park Avenue, New York 17, N. Y. M-68

UNIVERSAL ATLAS CEMENTS

USS

**UNIVERSAL ATLAS CEMENT COMPANY**—member of the industrial family that serves the nation—**UNITED STATES STEEL**

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*Ray Stuermer, A.I.A., Chicago*

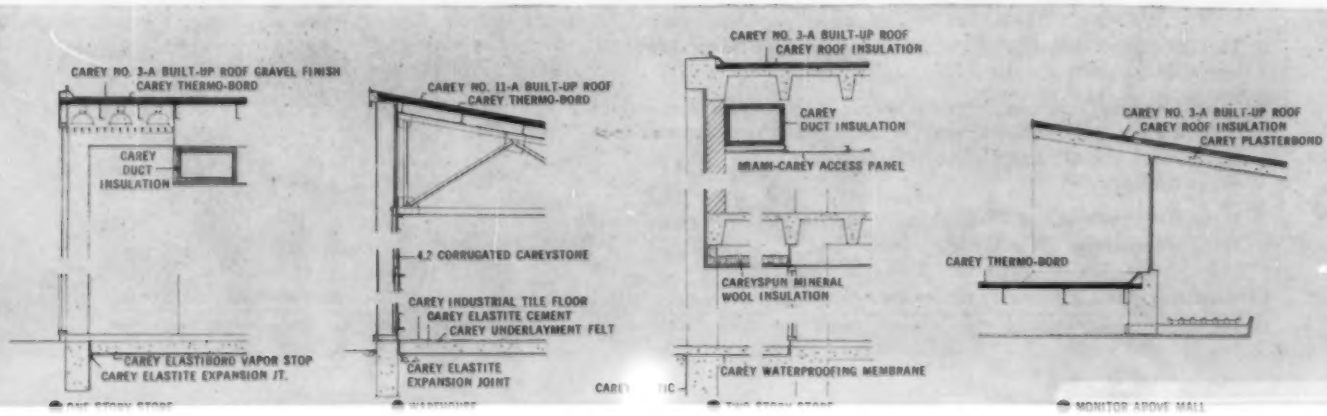
*Ray Stuermer, A. I. A., designs an . . .*

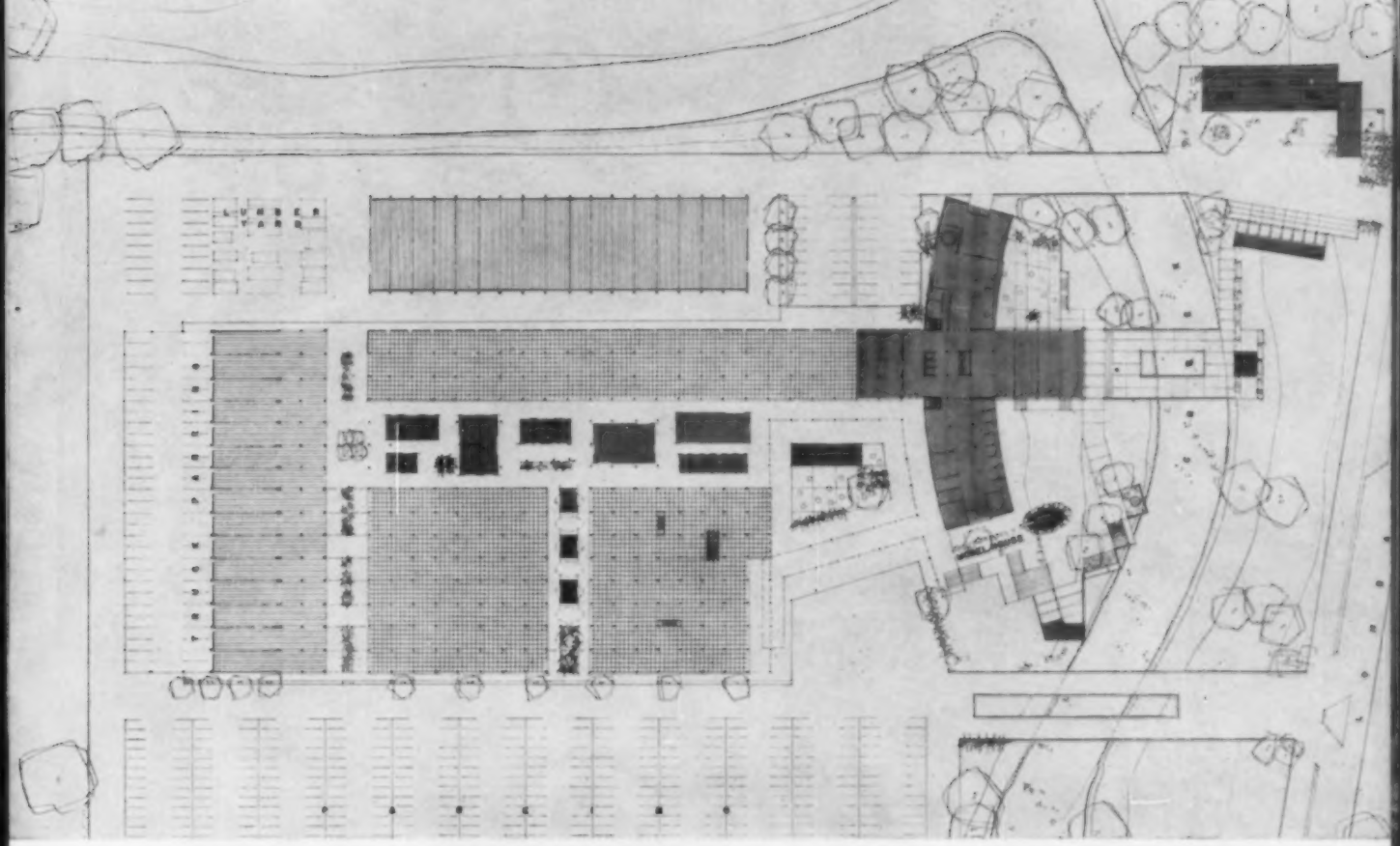
# associated builders'

*. . . a project originated*

The concept of supermarketing in the light construction field was first proposed in 1955 by Arthur Bohnen, Chicago builder, land developer, and construction materials specialist. Drawing on his wide background in the design, financing, and construction of residential property, Mr. Bohnen proposed a "shopping-center for homes"—a place to which the public could bring all its building and remodeling problems for logical and practical answers.

Chicago architect Ray Stuermer has interpreted this concept in his design for AN ASSOCIATED BUILDERS' CENTER. The project includes stores, offices, display space, facilities for architects, builders, materials suppliers, land developers, mortgage bankers, title and insurance specialists; areas are provided for meeting rooms, model homes, exhibition hall and auditorium, parking—for "centralized responsibility from land to landscape", as Mr. Bohnen expresses it.





*Arthur Bohnen, Developer, Chicago*

# center

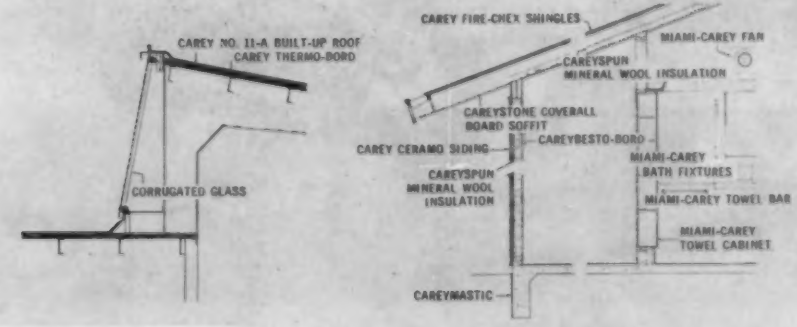
*by Arthur Bohnen*

**Because such a project provides so many interesting design and product application opportunities, Carey commissioned Mr. Stuermer to adapt some of his original design ideas to show how Carey Building Products could be used in constructing a shopping-center for homes.**

**Architect Ray Stuermer's plan and detail sheets are available to architects and builders. Ask your Carey representative or write The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio, Dept. PA-97.**

Carey®

BETTER PRODUCTS FOR BUILDING SINCE 1873




● WAREHOUSE CLERESTORY ● MODEL HOUSE

Engineers: Holmes & Narver, Inc.
Los Angeles, Cal.

Contractor: Newbery Electric Corp
Los Angeles, Cal.

# 22 Acres of Custom-Engineered Lighting by HOLOPHANE

In the great new Douglas Aircraft Plant at Long Beach, California, you can see clearly for more than 1000 feet—with a high degree of visual comfort....Reason: the lighting is produced by 5767 Holophane Prismatic HIBAY* reflectors...to our knowledge, the greatest accumulation of controlled illumination under one roof!

Holophane luminaires had been used by Douglas for many years ...The decision to install them in this new plant was another endorsement of Holophane lighting superiority.

Through research and development Holophane engineers are discovering new and better methods to meet the lighting problems of the nation's expanding industries. Chances are, they can help solve your problems, too. You may consult Holophane, through architects and engineers, without obligation.

*®

**Typical Holophane HIBAY Reflector**

To be sure of quality in Reflectors look for the name HOLOPHANE impressed on each piece.

**HOLOPHANE**
**COMPANY, INC.** • *Lighting Authorities Since 1898*
342 Madison Ave., New York 17, N.Y.
THE HOLOPHANE CO., LTD., 418 KIPLING AVE. SO., TORONTO 14, ONTARIO

The open-armed feeling of welcome comes from the appearance of the buildings, rather than their newness. Broad areas of glass give approaching youngsters full view of what is within.

AN L·O·F INTERVIEW WITH

**Charles J. Dove,** *Superintendent,*

MASON CONSOLIDATED SCHOOLS, ERIE, MICHIGAN

# Subject: Environment for Education

Superintendent Dove heads a school system that embraces 50 square miles in southeastern Michigan with an enrollment of 1,200 pupils. Over 750 attend two similar new schools, an elementary and a junior high, which are the pride and joy of the students, staff and taxpayers in the rural community they serve. Architects: Jahr-Anderson Associates, Dearborn, Michigan.

**Question:** Architect Lawrence Perkins, in his new book *Work Place for Learning* says an architect "must create the atmosphere, the environment, that contributes most to the full growth of each child's mental, physical and spiritual potentials." How do you think your new schools fulfill this objective?

**Mr. Dove:** These buildings are educationally functional. They measure up to the Perkins definition very well. We have achieved the environment we sought, a pleasantly relaxed atmosphere conducive to study and healthful recreation. Our premise was that a school should not be

L·O·F GLASS

considered a storage house for knowledge, but an active plant designed to produce healthy, happy, educated youngsters.

**Question:** Have there been perceptible differences in the attitudes of teachers and students who were transferred from older school buildings?

**Mr. Dove:** Our teachers are proud of their new facilities. They often invite guests and take them on personally conducted tours. And our teachers have actually become volunteer recruiters for new teaching talent. Their enthusiasm brings other teachers to us. For several years I have not sought teachers in colleges. There's no need to.

We have also observed attitude changes in children of all grades. First, as soon as we moved into the new schools, the youngsters appeared on the scene just a little more dressed up, so to speak. They seemed to want to keep pace with their new surroundings.

Second, we have had no malicious destruction of property in the new buildings. Even the casual pencil marks are missing.

And third, we experience less absenteeism in our new schools.

**Question:** Have you evidence that children feel your school is a welcome, rather than a forbidding, place to enter?

Our teachers are proud of these new facilities.

**Mr. Dove:** Definitely the open-armed feeling of welcome comes from appearance of the buildings, I think, rather than their newness. Our open, colorful entrances attract the children. These broad areas of glass give approaching youngsters full view of what is within.

And once inside, they are relaxed and eager for school work. Young people want to feel that they are connected with the world about them. They don't want to be enclosed. Large windows and glass-walled corridors give them a feeling of freedom.

**Question:** Are these glass-walled corridors practical, with windows on both the outdoor side and the classroom side?

**Mr. Dove:** Fine. Corridor traffic and activities in other visible areas have not proved distractive. Students soon become used to this environment.

LOF GLASS

PARALLEL-O-PLATE®

Large glass areas add a feeling of spaciousness to each room and give the children a feeling of freedom.

And the visibility afforded by these large windows also enables us to make maximum use of physical space. Our teachers conduct group conferences with a small number of children in the corridor while observing the activities within the classroom.

And don't forget our big window on the *outside* wall of the classrooms. We must remember that children learn from the world they live in. I like to consider our school as a shelter. From it the children look out and see this particular segment of the world. Out there, in effect, is the laboratory. Too often, we expect youngsters to learn in a vacuum.

**Question:** Do you find the use of glass on both sides of a classroom helpful in terms of lighting?

**Mr. Dove:** The expanse of glass in our windows and glass-walled corridors give us excellent bilateral lighting. The shadows, if any, are softer than with artificial light sources. And apart from foot-candle measurements, the bilateral natural daylighting has a good psychological effect.

We also have *balanced* daylighting. In schools that have windows on but one side of a room, lights are sometimes turned on to eliminate contrast. So our bilateral design for natural daylight is not only better, but it costs less.

**Question:** Are you successfully using visual aids, such as motion pictures and projected slides, in your classrooms?

**Mr. Dove:** Yes. There is no basic clash between visual aids and our glass walls. We use plastic curtains, on tracks, to reduce the light. They work out very well. At the outset we considered darkening a single room for all visual presentations, but we chose to use visuals in the respective classrooms, where they properly belong.

**Question:** How did the cost run on these lovely new buildings?

**Mr. Dove:** Detailed advance planning by all concerned, notably our architects and contractors, resulted in excellent buildings at comparatively low cost. Yet we did not skimp on up-to-date design or solid construction.

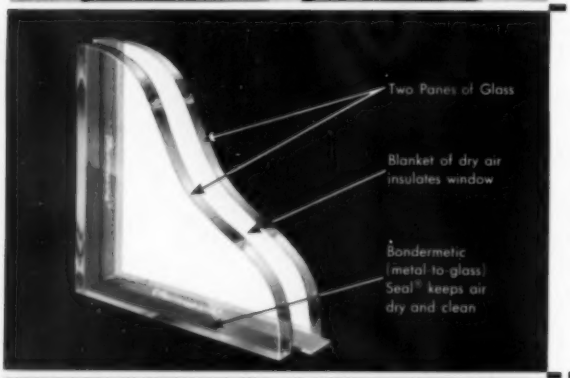
Our Central Elementary School cost about $12 per square foot and Central Junior High cost approximately $12.60 per square foot.

Our teachers conduct group conferences with a small number of children in the corridor, while observing activities within the classroom.

## PARALLEL-O-PLATE®

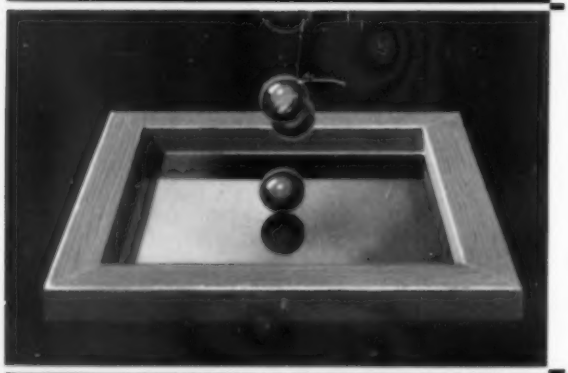
Cast a critical eye at the letters on the two eye-testing charts. The one on the left was taken through a pane of sheet glass; the one on the right through *Parallel-O-Plate* Glass.

With sheet glass, distortion is inevitable. With *Parallel-O-Plate*, you get maximum freedom from distortion. That's because of L·O·F's *twin-grinding* process in which both surfaces of the glass are ground simultaneously. Recommended for entrances and any other areas where architectural beauty and maximum lack of distortion are primary considerations.



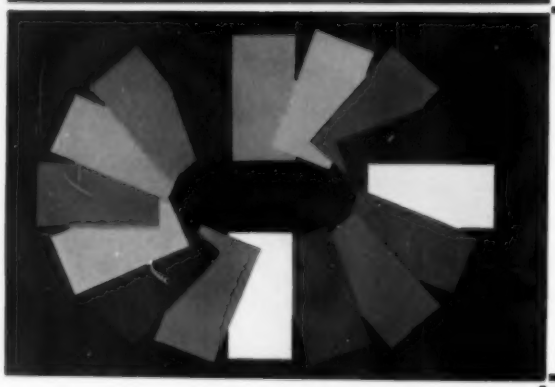

## THERMOPANE®

*Thermopane* insulating glass puts two panes and a sealed-in blanket of dry, clean air between the children and the outdoors. Drafts are reduced so rooms are more comfortable, especially for children sitting close to windows. *Thermopane* even deadens outside noises. And the heat loss you would get through single panes is cut almost in half. Recommended for all windows where its insulating properties would result in substantial savings in winter.



## TUF-FLEX®

Here you see a half-pound (1⅜″ diameter) steel ball, dropped from a height of ten feet, bouncing harmlessly off ¼″-thick *Tuf-flex* heat-strengthened glass. *Tuf-flex* is 3 to 5 times stronger than regular plate glass of the same thickness. If maximum resistance is reached, *Tuf-flex* disintegrates into relatively harmless, rock-salt size particles. Recommended for gymnasiums, entrance doors and side lights, areas facing playgrounds . . . any area where youngsters and missiles are in rapid motion.



## VITROLUX®

Used instead of masonry as an exterior facing material; also for interior partitions. Rich color, fused to the back of this clear, heat-strengthened plate glass, adds youthful beauty and cheerful character to your school. Natural resistance to weathering, crazing and checking. Standard maximum size of *Vitrolux* panels is 48″ x 84″. Special orders up to 60″ x 84″. Thickness: ¼″ plus 1/64″ minus 1/32″. Sixteen standard colors plus black and white. Also in non-standard colors subject to manufacturing limitations.

Send coupon for your free copy of our book *How To Get Nature-Quality Light For School Children.* Complete. Authoritative. Packed with facts. Valuable for anyone interested in the design of school buildings.

Libbey·Owens·Ford Glass Company
608 Madison Avenue, Toledo 3, Ohio
Please send me Daylight Walls book.

Name _____
(Please Print)

Address _____

City _____ Zone _____ State _____

AP-706

LOF GLASS

glass FOR SCHOOLS

LIBBEY·OWENS·FORD GLASS COMPANY
TOLEDO 3, OHIO

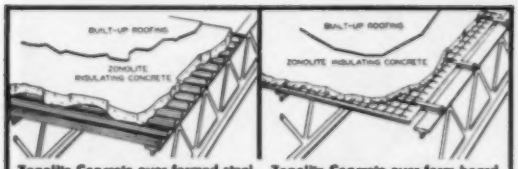
# they all shopped for Firesafe, Lightweight, Low Cost Construction

Zonolite vermiculite Concrete roof deck 300,000 sq. ft. on Great Southern Shoppers Mart, Bridgeville, Pa. Arch: C. Melvin Frank

Northland Shopping Center, St. Louis, Mo. Zonolite plaster fireproofing is credited with earning substantial fire insurance savings. Arch: Russell, Mullgardt, Schwarz & Van Hoefen

Gulfgate Shopping City, Houston, Texas, uses Zonolite plaster fireproofing throughout. Arch: John Graham & Co.

# they* all bought ZONOLITE®




Zonolite Concrete over formed steel  Zonolite Concrete over form board

Zonolite insulating concrete meets any combination of requirements for roof design. Poured monolithically over formed steel, form boards, metal lath, paper-backed wire lath.

## Vermiculite Concrete Roof Decks or Plaster Fireproofing

***Shopping Centers "shop," too.** That's why leading architects and engineers specify Zonolite "poured-in-place" concrete roof decks—and Zonolite fireproofing for floors, ceilings, beams or trusses.

**Zonolite roof systems,** adaptable to *any* design, speed construction—cut labor costs. But, above all, they provide important superior qualities...added benefits that mean so much to your clients. Zonolite is one-hundred-percent non-combustible; it cannot burn—it reduces insurance premiums as much as *half!* It insulates! It cuts thousands of tons of dead weight. *And, it's permanent!*

**Zonolite fireproofing** means the "best possible fire protection,"—earns highest fire ratings. It saves on steel—permits the use of lighter structural members, hence providing initial economies in addition to "over-the-long-run" savings.

If you are now planning a shopping center—or school, church, hospital, commercial building—get the complete facts about time-saving, cost-saving Zonolite roof deck systems or Zonolite fireproofing.

## ZONOLITE VERMICULITE PLASTER FIREPROOFING

Now—*machine-placement* of Zonolite is enabling architects and builders to build greater performance into structures *faster and at lower cost!*

**BE INFORMED** on the remarkable new developments now taking place in roof deck construction and in machine placement of fireproofing. Mail coupon for free booklets on cost-saving, permanent, firesafe Zonolite products. Includes full technical data, drawings, specifications.

**ZONOLITE COMPANY,** Dept. PA-97, 135 S. La Salle St., Chicago 3, Ill.

Send me booklets PA-32 "*Plaster and Acoustical Systems,*" and CA-19, "*Systems of Lightweight Roof Construction.*"

*Name*_____

*Firm*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

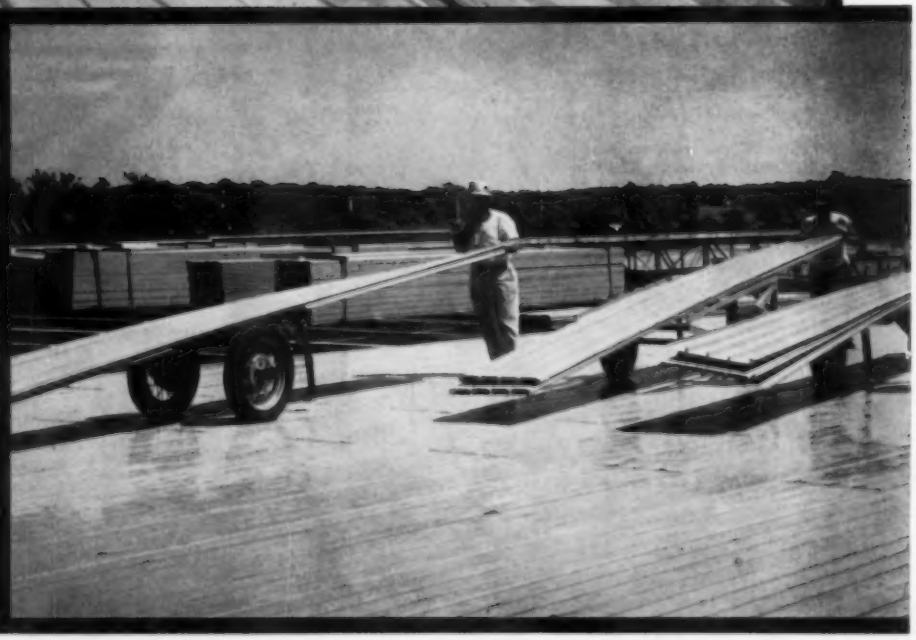
Architect ☐ Builder ☐ Other_____

# MILCOR® STEEL

Easy installation of Milcor Steel Roof Deck helped save time in getting the Lincoln plant in Novi ready to produce 1958 models. The light-weight deck afforded additional savings on size and cost of structural members.

The protective value of Milcor's exclusive Bonderized, baked-enamel primer resists mars and scratches in shipping — in hoisting — and in construction! It stands up under workmen's heavy shoes, carts, wheelbarrows, asphalt buckets, and countless other factors of building traffic.

| | |
|---|---|
| ARCHITECTS AND ENGINEERS | Smith, Hinchman & Grylls Associates, Inc., Detroit |
| GENERAL CONTRACTOR | W. E. Wood Company, Detroit |



# ROOF DECK

## 250 squares a day!

25,000 square feet every day — that's getting under cover in a hurry! Ford Motor Company did it on the Lincoln Motor Division Plant in Novi, Michigan.

Steel Roof Deck was chosen for this job because it can be laid fast *in any weather in which a man can work* — no costly delays due to the effects of rain, snow, or zero weather. Time is vital in any business, but especially in the expansion of the automobile industry—this plant had to get into production fast.

Speed is the rule on *any* Milcor Deck job. *24-inch width* means less welding. *Lengths up to 28'6"* cover faster. *Die-set ends* make fitting easy and rapid. *¾"-wide ribs* permit welding from the top.

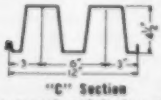
See the Milcor Roof Deck Catalog in Sweet's — Section 2d/InL. Or write for a copy of Catalog 240.

**MILCOR®** STEEL ROOF DECK

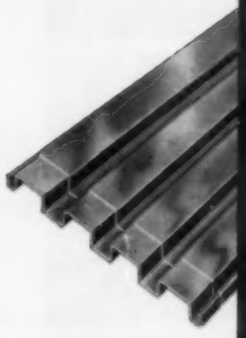
. . . available in three different sizes

**"A" Section**
The standard of the industry for closed-rib decks full 24" width.

**"B" Section**
Wide rib distributes metal for greater structural efficiency — gives higher section properties per pound of steel.




**"C" Section**
Carries normal roof loads over spans up to 20'! Offers freedom of design.



### Milcor Celluflor

Gives clients electrical flexibility that keeps pace with the constant increases in electronic office equipment. Does this at savings in steel, footings, time, overhead. See Sweet's, Section 2 a/In —or write for your own copy of Catalog 270.

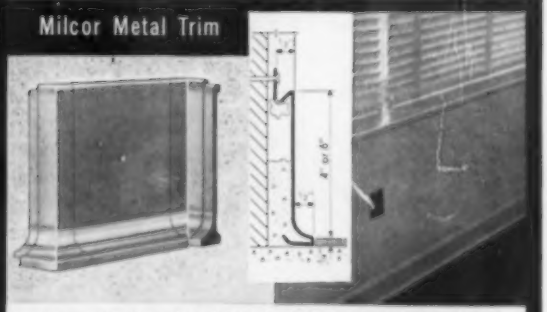
### Milcor Ribform

Rigid centering for concrete on spans up to five feet. Quickly installed — eliminates scaffolding — uses as much as 20% less concrete than flexible centering — permits monolithic finishing, without costly topping. For planning help, see Sweet's, Section 2F/In — or write for copy of Catalog 245.

### Milcor Wall Units

Clean, space-saving units have built-in window trim and integral enclosures for convectors, radiators, and air-conditioning equipment. Available as factory-welded assemblies or knocked-down for assembly on the job. See Sweet's, Section 12a/InL —or write for your copy of Catalog 102.

### Milcor Metal Trim



A complete line of steel trim in designs, sizes, and weights for every exposed interior detail. All afford permanence, fire-safety, and resistance to use and abuse. See Sweet's, Section 12a/InL — or write for your copy of Catalog 102.

**INLAND STEEL PRODUCTS COMPANY**
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KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW ORLEANS • NEW YORK • ST. LOUIS.

RD-6

*On James Sales Elementary School, Tacoma, Washington*

# Fir plywood roof deck helps save $3,300^{00}$

**ALTERNATE COST DATA**

Summary of installed costs per M sq. ft. Based on actual suppliers' quotations and time records where available and on Walker's Estimator's Handbook where not:

1. As built, with clips, eliminating blocking at panel edges. Includes cost of new plywood and 50% of initial cost of exterior plywood salvaged from forms . . . . . $169*
2. Estimated cost as built but using all new sheathing with no salvage from concrete forms . . . . . $187
3. Estimated cost all new sheathing with 2 x 4 blocking at panel edges . $206
4. Estimated cost 2 x 6 T & G decking . $291

*169.00 per M "as built" cost represents $122.00 per M savings over estimated cost of 2 x 6 T & G decking. On this basis, savings on entire job total $3,300.00.

To eliminate 2 x 4 blocking, metal "H" clips were used at unsupported panel edges. Two clips were used for each span. (Clips were responsible for approx. $20 per M of savings; see table above).

JAMES SALES ELEMENTARY SCHOOL;
Tacoma, Washington
ARCHITECTS: Lea, Pearson and Richards
CONTRACTOR: Nelson Construction Company
STRUCTURAL ENGINEERS: Smith and Murray

AN EXCELLENT EXAMPLE of how fir plywood roof decking sharply cuts costs as well as provides markedly superior construction is this new U-shaped, 1-story reinforced concrete school.

The contractor estimates ¾" fir plywood saved a total of $3,300.00 on the job; $2,800.00 in actual installed cost, plus an additional $500.00 by amortizing costs of some of the panels previously used for forms. A total of 27,000 sq. ft. were used on the job. Design calculations by the architects show plywood superior in resisting racking forces such as wind loads and earthquakes.

Although many home builders have found thick plywood over wide rafter spacing saves money, this is one of the first detailed cost analyses for a larger building. The idea points the way to new opportunities for reducing costs on commercial and industrial buildings as well as schools.

DFPA TESTED QUALITY

# Fir Plywood

*means quality construction*

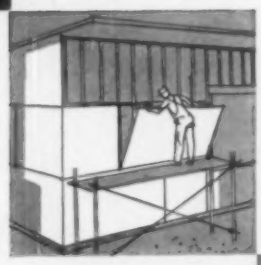
**"SCHOOLS OF THE FUTURE"**

. . . a new portfolio collection of design ideas embodying the thinking of six of the nation's leading architects. A stimulating and imaginative approach to what tomorrow's schools can and should be. Separate folio devoted to each architect's work. Fully illustrated and detailed in brilliant color.

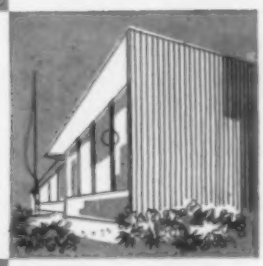
Also included: *"Fir Plywood in Schools for Quality Construction at Lower Cost,"* a new 8-page design and specification guide.

**FOR YOUR FREE COPY of this new portfolio write Douglas Fir Plywood Association, Dept. 110, Tacoma 2, Washington (Offer good USA only)**

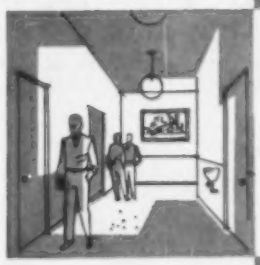
## 5 ways Fir Plywood builds better schools



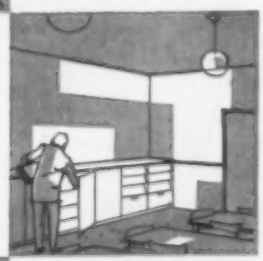
**1.** Strong, rigid, easy-to-apply wall and roof sheathing.



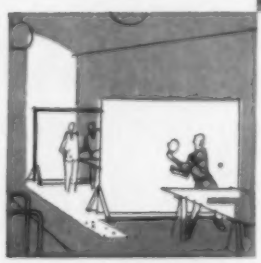
**2.** Smart, durable siding, soffits and exterior trim.



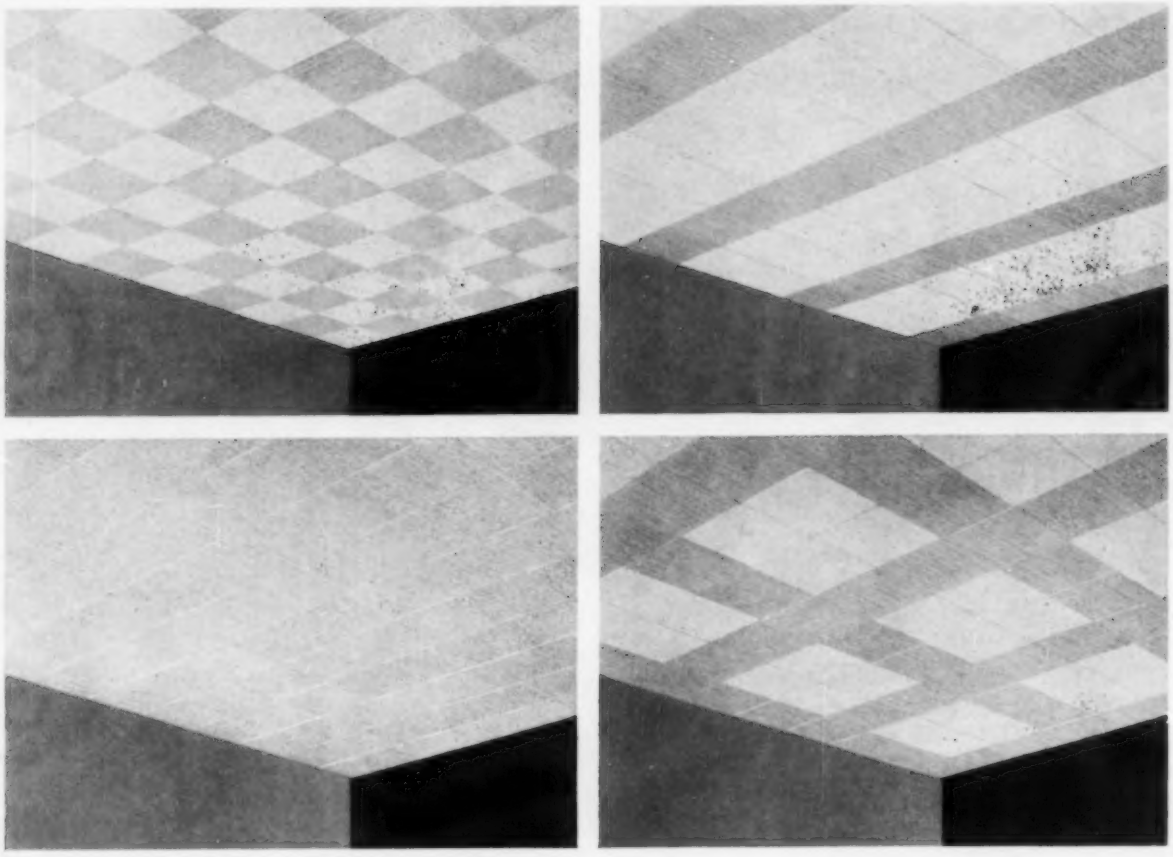
**3.** Attractive, damage-resistant paneling and wainscoting.



**4.** Good-looking wardrobes and storage lockers.



**5.** Inexpensive, easy-to-build screens, movable partitions.



# Striated Travacoustic—the acoustical tile that gives full scope to your ceiling design ideas

There's practically no limit to the ceiling patterns you can achieve with Gold Bond Striated Travacoustic. You can provide distinctive ceiling decoration for each interior by arranging tiles so striations form attractive ceiling patterns.

Each tile's surface is a subtle mixture of striations blended with random fissures. This pattern not only provides smart good looks—but eliminates the "mechanical" appearance often associated with other striated tiles.

Gold Bond Striated Travacoustic is made from select mineral fibres—has a Noise Reduction Coefficient of .70-.80. Easily installed over new or existing ceilings.

For more information send for free booklet, The Decibel, showing actual acoustical case histories. Dept. PA-97, National Gypsum Company, Buffalo 2, New York.

*ACOUSTICAL CEILINGS*

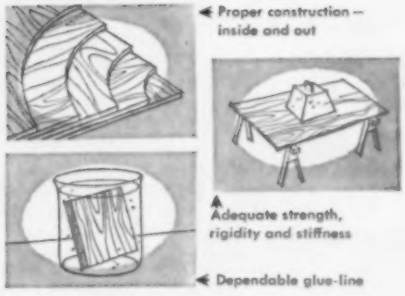
NATIONAL GYPSUM COMPANY

Gold Bond
BUILDING PRODUCTS

# you know you're right when you specify by DFPA* grade-trademarks

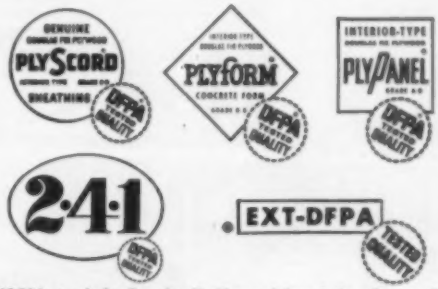
## factory-inspected, laboratory-tested

To qualify for DFPA grade-trademarks, manufacturers must pass rigid and *continuous* inspection of current plywood production. In addition to these on-the-spot mill checks by DFPA quality supervisors, thousands of samples undergo scientific testing in DFPA laboratories. *Use of grade-trademarks may be withdrawn if quality is not satisfactory.*




## right grade, right quality for every job

DFPA grade-trademarks are specification guides to the *right* grade for a specific job. Only genuine DFPA quality-tested panels bear DFPA registered grade-trademarks. *There are imitations. Don't be misled!*

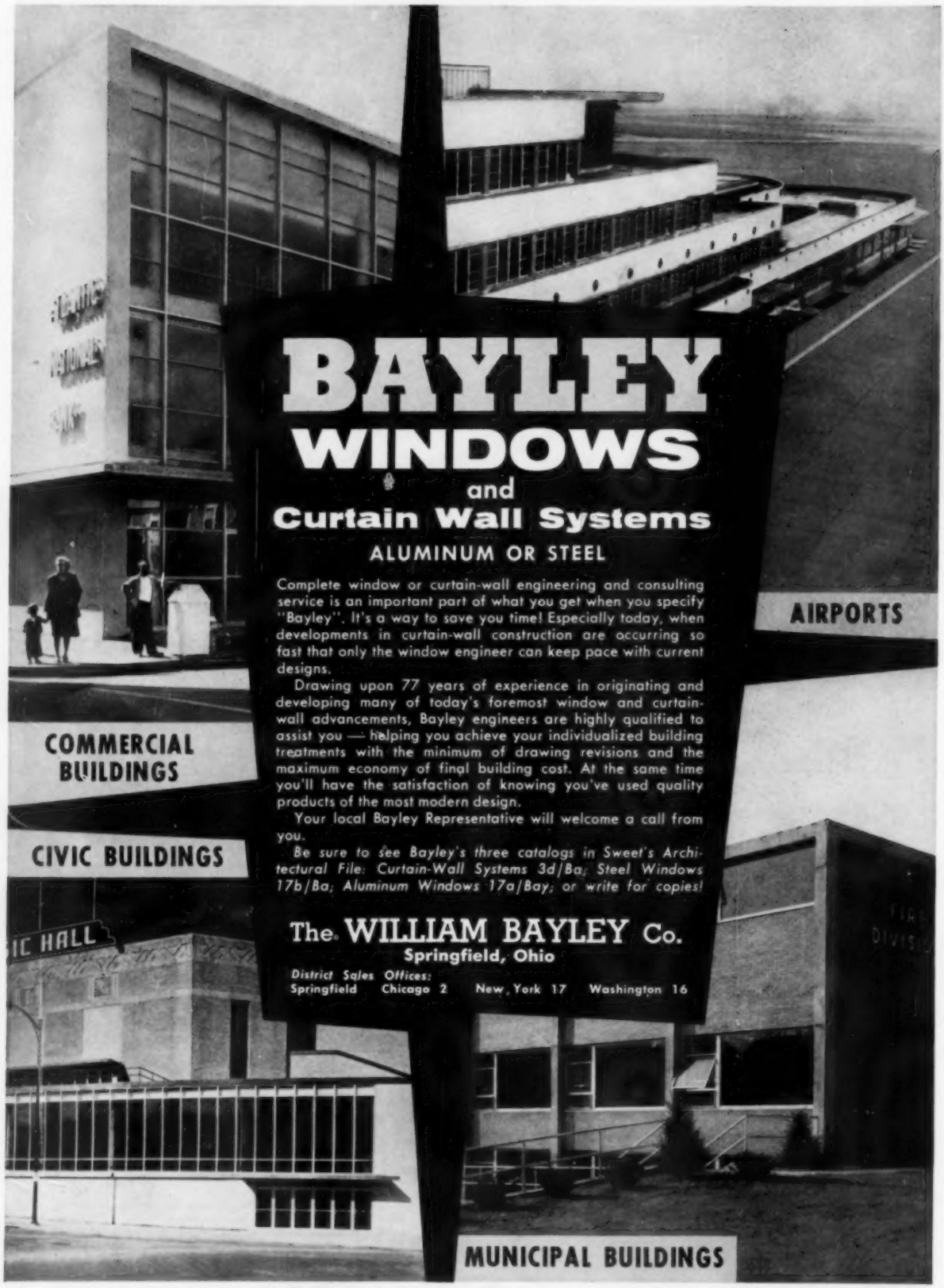



***Be sure you can tell the difference.***

Send for the *DFPA Quality Story*—a portfolio of grade-use data and a step-by-step description of the DFPA quality control program. Write Douglas Fir Plywood Association, Tacoma 2, Washington. (Offer good USA only)

*DFPA stands for Douglas Fir Plywood Association, Tacoma 2, Washington—a non-profit industry organization devoted to product research, promotion and quality maintenance.

DFPA grade-trademarks mean quality **Fir Plywood**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Complete window or curtain-wall engineering and consulting service is an important part of what you get when you specify "Bayley". It's a way to save you time! Especially today, when developments in curtain-wall construction are occurring so fast that only the window engineer can keep pace with current designs.
Drawing upon 77 years of experience in originating and developing many of today's foremost window and curtain-wall advancements, Bayley engineers are highly qualified to assist you — helping you achieve your individualized building treatments with the minimum of drawing revisions and the maximum economy of final building cost. At the same time you'll have the satisfaction of knowing you've used quality products of the most modern design.
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Be sure to see Bayley's three catalogs in Sweet's Architectural File: Curtain-Wall Systems 3d/Ba; Steel Windows 17b/Ba; Aluminum Windows 17a/Bay; or write for copies!
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*Architect:* M. A. Dyer Co. — Boston, Mass.

*Architect:* M. Leonard Levine *Designer:* H. S. Orenstein

*Architect:* James A. Britton — Greenfield, Mass.

*Architect:* M. A. Dyer Co. — Boston, Mass.

# *Colorful and Practical* . . . Kilnoise® Tiles

Designing a classroom? office? retail store? Whatever the purpose of the room, KILNOISE Decorator's Colors will add the subtle touch of beauty to a functional ceiling. All KILNOISE tiles have a rich textured surface which the architect may select in brilliant white or in a range of soft pastel shades.

All-mineral KILNOISE acoustical tiles are completely stable . . . unaffected by changes in temperature or humidity . . . offer maximum fire protection and light reflection.

*Remember*, in most cases, KILNOISE Decorator's Colors cost no more than white mineral tiles. For complete details contact your local acoustical applicator or write:

**KILNOISE**
**Acoustical Tile**

NEW ENGLAND LIME COMPANY • *Adams, Massachusetts*

**Kilnoise Decorator Colors:**
*Pink Ice, Driftwood, Key Lime, Amberlite, Frost Blue, Sand Beige, Copenhagen Blue, Charcoal, White*

# keeping exterior stone and brick looking clean and new:

*Ford Rotunda, Dearborn, Michigan*

## WATER ABSORPTION TESTS ON LIMESTONE BLOCKS

| Material | Period of Time Exposed to Weather | Percent of Absorption After 3 years, 8 months exposure to weather then totally immersed for 48 hours |
|---|---|---|
| Limestone coated with "Super-Por-Seal with Silicone" | 3 years, 8 months | .44% |
| Untreated Limestone | 3 years, 8 months | 3.18% |

*WTMJ, Milwaukee, Wisconsin*

*University of Detroit Memorial Bldg., Detroit, Michigan*

Fine architectural structures too soon become begrimed and unsightly unless protection against weathering is provided at the time of construction. The problem, which is mainly the repelling of water, is greatest when the exterior surface is limestone, porous brick, concrete or stucco.

Discoloration of exterior masonry usually reaches such an advanced stage that sand-blasting, or steam-cleaning, is employed to restore a look of newness to the surface. And although this process rids the surface pores of dirt, it also opens up the pores still more, so that subsequent discoloration progresses even faster than before.

The solution to the problem of discoloration lies in attacking the very root of the trouble. Discoloration is caused by rain washing down over exterior surfaces and carrying with it soot, grime and dust, depositing such material in the surface pores. When the water is repelled instead of absorbed, discoloration does not occur. But the problem is greater than would appear at first glance. It is not so much to find a colorless repellent that will repel water as it is to find a repellent that will *keep on* being effective over a period of years.

Truscon "Super-Por-Seal with Silicone" combines the weather resisting and water repellent features necessary to protect the finest types of construction materials. Limestone and other fine structural stones retain their natural appearance and beauty longer.

Spalling and discoloration are the common causes of unsightly appearance. A single coat of "Super-Por-Seal with Silicone" will help to maintain the dignity of appearance of fine structures for years. Absorbent types of surfaces, such as common red brick and mortar, are likewise protected against water and dirt absorption, as the surface pores are actually lined with repellent and chemical resistant "Super-Por-Seal with Silicone."

**For details and specifications write Truscon Laboratories, Dept. P-9. Detroit 11, Michigan**

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THERMOTANK®
Originators of . . .
HIGH VELOCITY THERMO-REG UNITS
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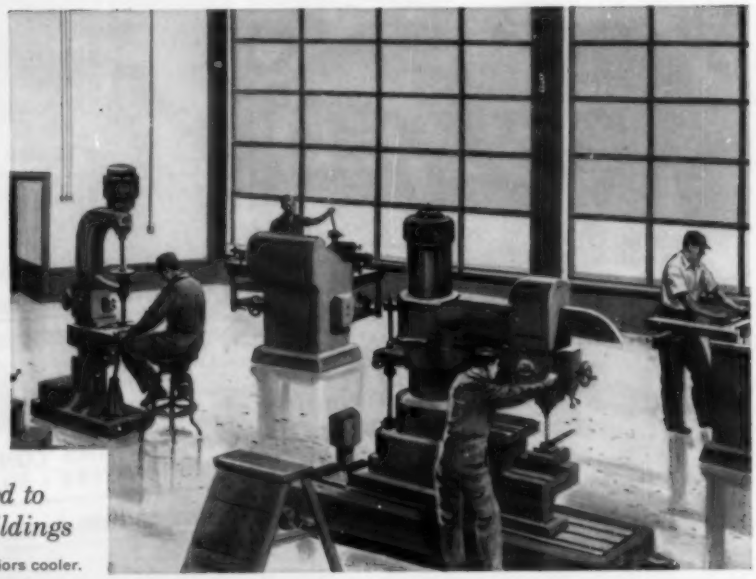
# Presenting...SOLARGRAY™

## Pittsburgh's latest contribution

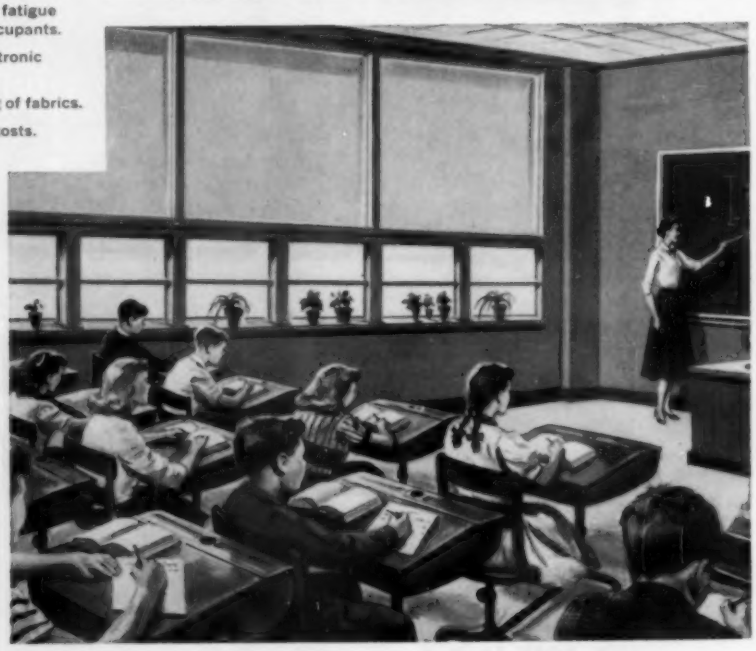
- *This Plate Glass has excellent brightness and glare control.*
- *It offers complete freedom from color problems in daylight.*



*Ideally suited to all types of buildings*

SOLARGRAY keeps interiors cooler.

- It reduces eyestrain and fatigue among the building's occupants.
- It protects delicate electronic instruments.
- It reduces sun-bleaching of fabrics.
- It cuts air-conditioning costs.



# PLATE GLASS

## to the building field

- *It has a high degree of solar heat control, with a pleasing neutral color.*
- *It is a new approach to environment-controlling glass.*

SOLARGRAY is a neutral gray Plate Glass, possessing exceptional resistance to sun glare, with great heat-absorbing properties. It was especially developed by Pittsburgh Plate Glass Company to fill the need for a Plate Glass which would reduce the annoying heat and brightness of the sun, and at the same time permit maximum entrance of comfortable, relaxing daylight into the building's interior.

Architects have found *Pittsburgh's* SOLARGRAY Plate Glass to be a high-quality, utterly dependable structural material in literally every kind of building. Moreover, SOLARGRAY has proved its ability to reduce the load on air-conditioning systems, thereby producing sizable savings both in the operation of the system and in the initial cost of the equipment. It is available up to a maximum size of 120″ x 220″, and in ¼″ and ⅜″ thicknesses.

For complete information on SOLARGRAY, contact your nearest *Pittsburgh* branch or distributor. Meanwhile, fill in and return the coupon for our free booklet which gives further details on this new heat-absorbing, glare-reducing Plate Glass.

**solargray**™

*the heat-absorbing, glare-reducing Plate Glass*

*Write for free folder*

PLEASE PRINT

**Pittsburgh Plate Glass Company**
**Room 7367, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.**

*Without obligation, please send me your free folder on Pittsburgh's new SOLARGRAY heat-absorbing, glare-reducing Plate Glass.*

**Name** .....

**Address** .....

**City** ..... **State**.....

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**PITTSBURGH PLATE GLASS COMPANY**

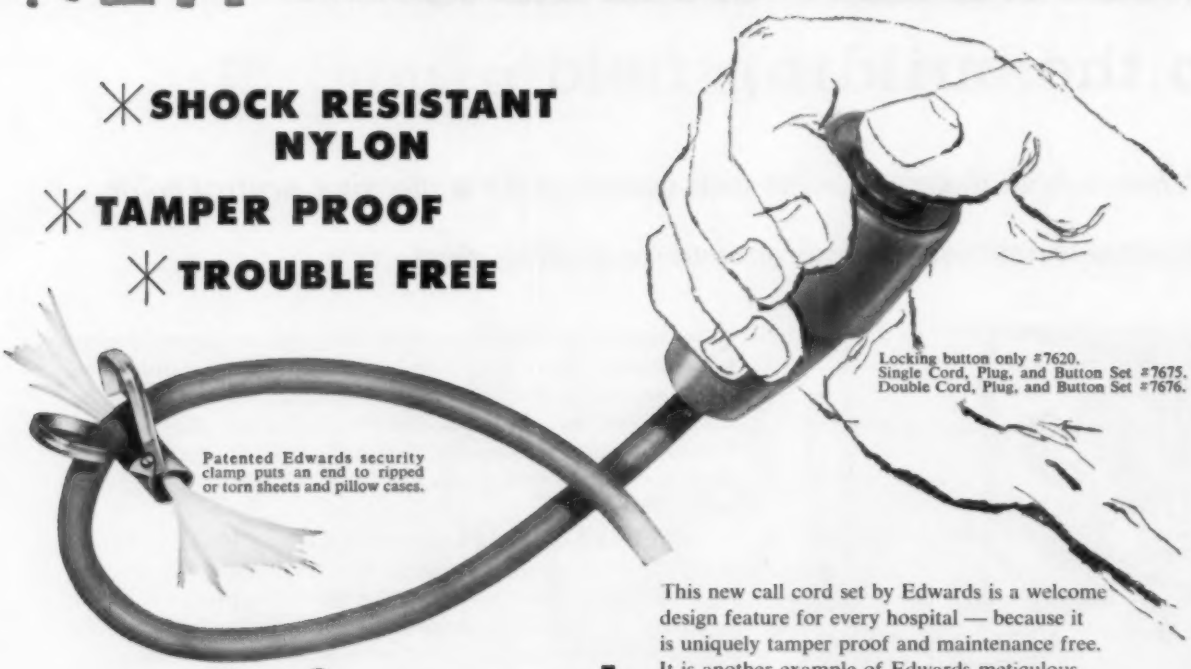
**IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED**

# NEW Edwards Nurses Call Cord Set

**✳SHOCK RESISTANT NYLON**

**✳TAMPER PROOF**

**✳TROUBLE FREE**



Patented Edwards security clamp puts an end to ripped or torn sheets and pillow cases.

Locking button only #7620.
Single Cord, Plug, and Button Set #7675.
Double Cord, Plug, and Button Set #7676.

This new call cord set by Edwards is a welcome design feature for every hospital — because it is uniquely tamper proof and maintenance free. It is another example of Edwards meticulous attention to detail in the development of hospital and institutional signaling systems. The molded-Nylon button, with vinyl cord and molded plug, has received rigorous laboratory testing — the tests prove conclusively that the Edwards call set and all its parts will outlast and outperform any other! There are many reasons why — some of them shown in detail here.

An Edwards sales engineer will be happy to furnish further information about this and other Edwards hospital signaling devices. Write Dept. PA-9, Edwards Company, Inc., Norwalk, Connecticut. (In Canada: Edwards of Canada, Ltd., Owen Sound, Ontario).

**Step on it! Drop it! The molded Nylon shell withstands shock. Will withstand severest use.**

**Attractive grey color of button, cord, and plug never fades . . . cord never dries out or cracks.**

**Built-in strain relief assures positive connections at all times.**

**Twist the button or the cord and wires won't short or break. Shell just turns harmlessly.**

Tamper proof button: no exposed screws or parts.

**Button is easily reset by pressing large collar at any point. Accidental reset is a thing of the past.**

**No more short circuits due to defective plugs. Plug is molded on cord.**

**Cord is held securely in wall receptacle by rugged molded-in prongs.**

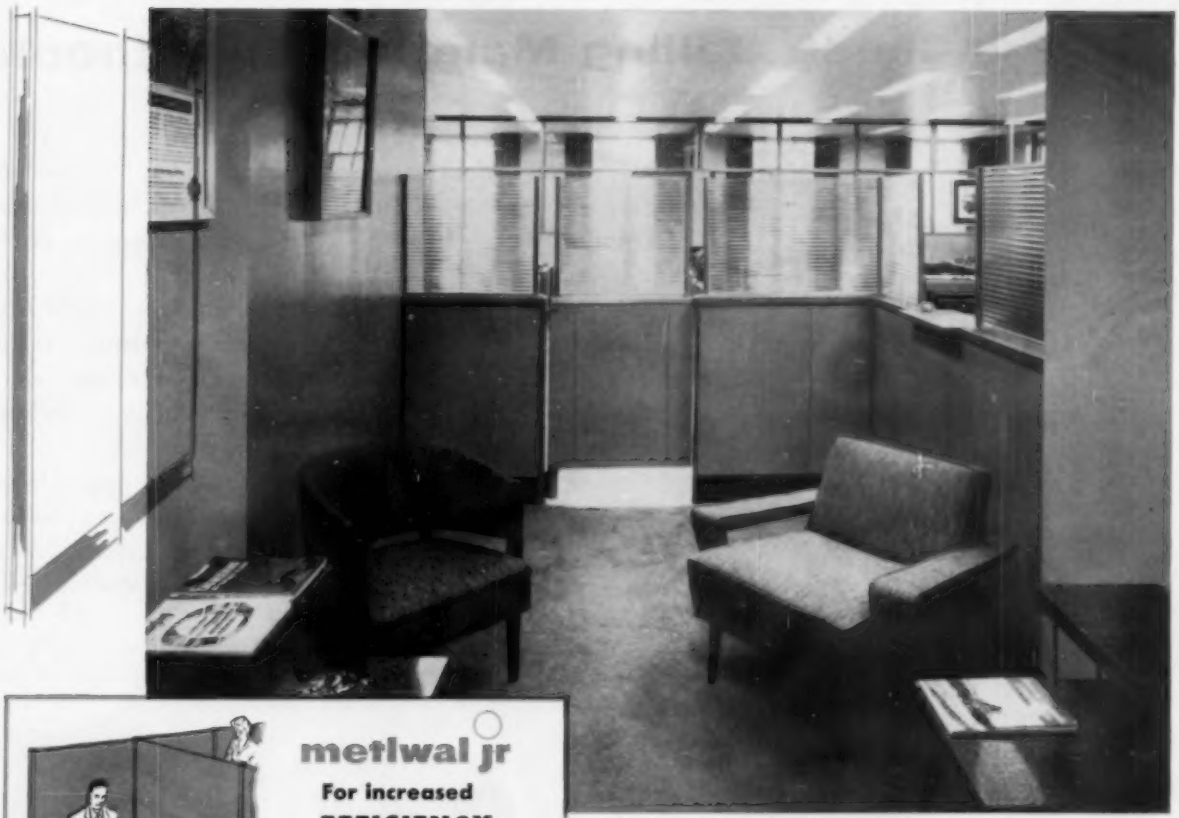
**EDWARDS**

DESIGN • DEVELOPMENT • MANUFACTURE

*Specialists in signaling since 1872*

# metlwal did this . . .

## it can do the same for you
## ECONOMICALLY . . . EFFICIENTLY . . . QUICKLY



*Architects: Marani & Morris —*

This is the reception room of a typical office in the Confederation Life Bldg., Toronto, Ont. It includes Metlwal glazed gate, railings and information window. Behind this attractive reception room are other Metwal color-mated private and semi-private offices and pleasant work areas.

42"

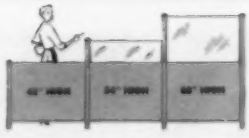
54"

68"

### metlwal jr

**For increased EFFICIENCY**

- The size you want . . . where you want it.
- Complete privacy.
- Choice of decorator colors.
- Adapted to any floor layout you plan.
- Sturdy, but as movable as office furniture.



The 3 standard heights shown above give you your choice of private, semi-private or railing height enclosures.

**metlwal** *by* PROSPERITY
DIVISION OF WARD INDUSTRIES CORPORATION

The Prosperity Company, Metlwal Division 13-M
125 Marcellus Street
Syracuse, New York

Please send me further information on ☐ metlwal, ☐ metlwal jr.

Name_____

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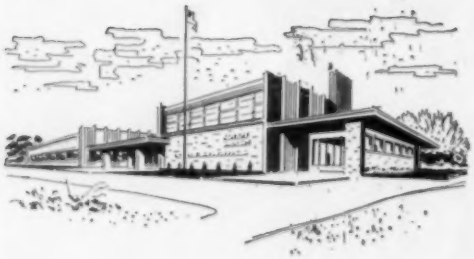
Province_____

# There's "Idea Potential"

## in these Ceiling Materials for Schools



Today's materials must go beyond merely providing basic products for the architect to work with. They must suggest new directions for him to take in designing a project, toward economy, utility, and style.

That's why architects appreciate Acousti-Celotex Sound Conditioning materials. Through these versatile materials, a high degree of flexibility is possible in entire area layouts. Space above the ceiling is readily accessible, light fixtures and tile can be interchanged, partitions rearranged.

Celotex acoustical materials are available in an ever-widening range, designed to meet your diversified needs. In the planning stage of your next project, consult your Acousti-Celotex Distributor. Let him show you how his new products, plus his service and experience, can help you.

**FOR INFORMATION** and specification data on Celotex Acoustical Products and translucent panels, write The Celotex Corporation, 120 S. LaSalle St., Dept. C-97, Chicago 3, Illinois.

TRADE MARK

# ACOUSTI-CELOTEX

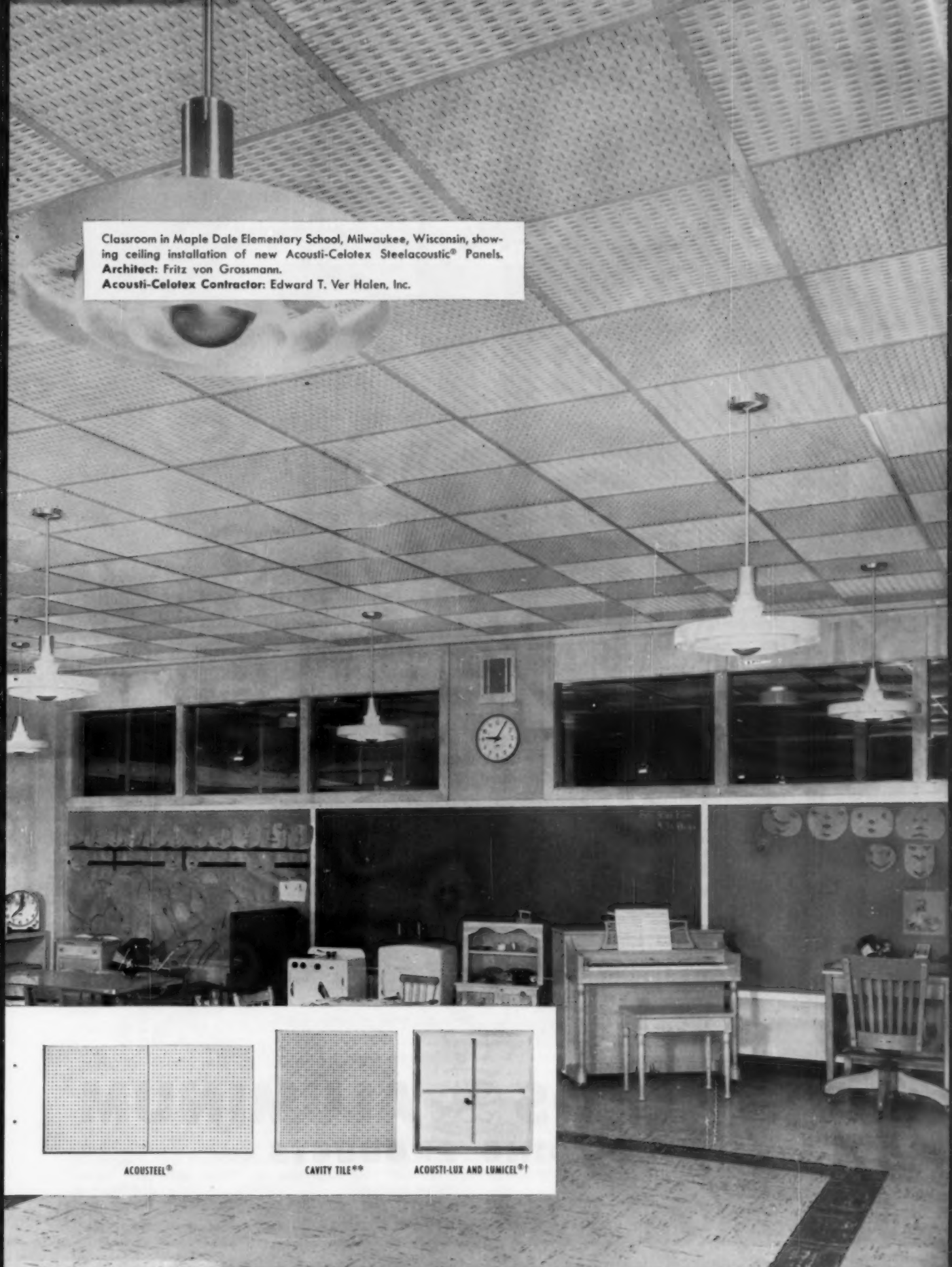
REGISTERED U. S. PAT. OFF.

*Sound Conditioning*

**Products to Meet Every Sound Conditioning Problem . . . Every Building Code**—The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Ill. **In Canada:** Dominion Sound Equipments, Ltd., Montreal, Quebec

PERFORATED CANE FIBER TILE* | PERFORATED MINERAL TILE* | CELOTONE® | STRIA-TONE® | STEELACOUSTIC®

*U. S. PAT. NO. D-168,763 **U. S. PAT. NO. 2,159,488 † U. S. PAT. NOS. 2,218,992 AND 2,710,838



Classroom in Maple Dale Elementary School, Milwaukee, Wisconsin, showing ceiling installation of new Acousti-Celotex Steelacoustic® Panels.
**Architect:** Fritz von Grossmann.
**Acousti-Celotex Contractor:** Edward T. Ver Halen, Inc.



ACOUSTEEL®

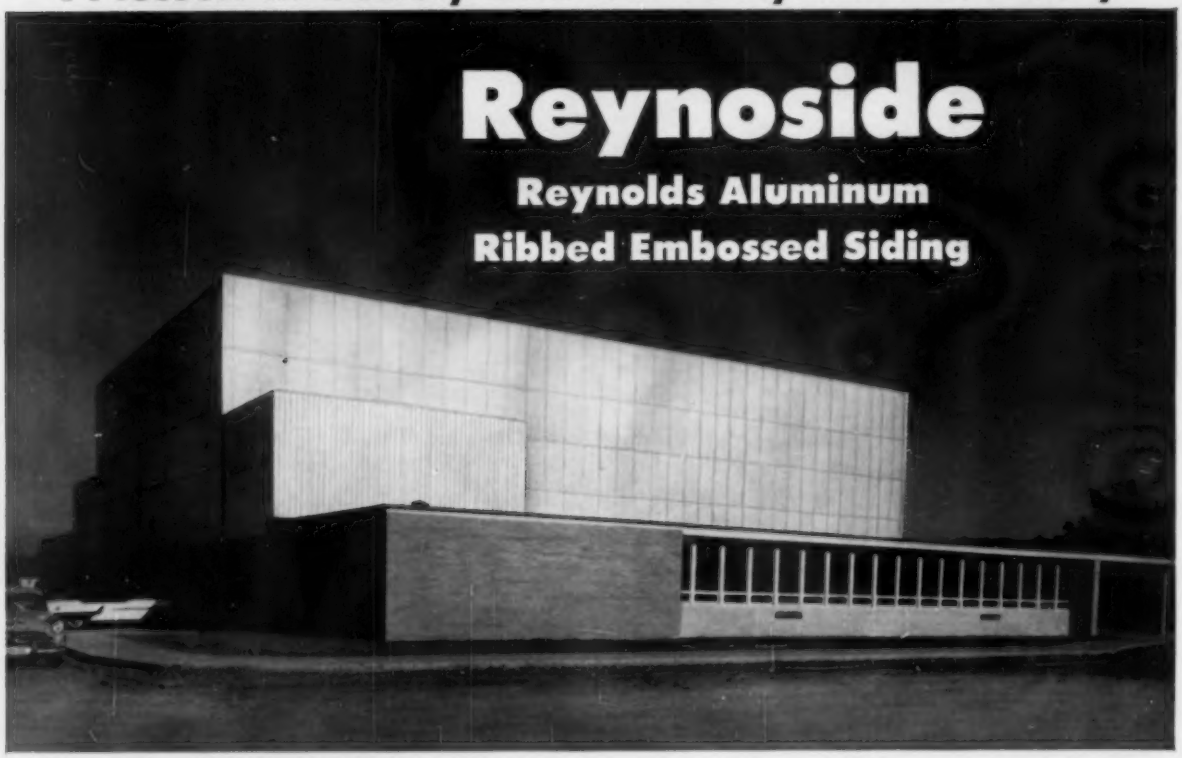


CAVITY TILE**



ACOUSTI-LUX AND LUMICEL®†

# A lesson in beauty and efficiency with economy




***Shawano High School, Shawano, Wisconsin***

**Architect:**
Edgar A. Stubenrauch & Associates
Sheboygan, Wisconsin

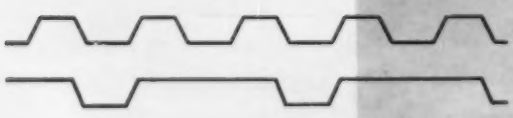
**General Contractor:**
Palisades Construction Co.
Appleton, Wisconsin

**Materials:**
Reynoside* 8" Rib (.051 thickness) with 1½" glass fiber insulation and back-up sheet of .032" flat-embossed Reynolds Aluminum.

How to achieve efficiency and beauty economically is a lesson well taught by this magnificent high school...a lesson that applies to all modern industrial building. Economy starts with the rapid, low-cost erection of the wall. Not merely beautiful, its two highly heat-reflective aluminum surfaces combine with glass fiber insulation between to assure significant winter fuel savings as well as cooler classrooms in hot weather. Aluminum slashes maintenance costs, too. Rustproof and highly corrosion-resistant, it withstands weather and time without painting...ever. Thus low applied cost is paired with low upkeep for all-around economy!

**A complete installation service is available. For name of your nearest Jobber-Erector, call the Reynolds Office listed under "Building Materials" in classified phone books of principal cities. For literature, write Reynolds Metals Company, Building Products Division, Louisville 1, Kentucky.**

See "Circus Boy", Sundays, NBC-TV. Watch for Reynolds on "Disneyland", ABC-TV Network.



*Reynoside standard types are 4" rib, .032" thick; 8" rib, .032" and .040" thick. Embossed finish. Lengths from 5' to 22'5" in 6" increments. Nominal width coverage is 40".

**REYNOLDS ALUMINUM**
**BUILDING PRODUCTS**

# WEATHERBAN

BRAND CURTAIN WALL SEALER

Photo courtesy of Connecticut General Life Insurance Co.
Test conducted by General Bronze Corporation

## New curtain wall sealer resists hurricane fury!

Wind hits a screaming 130 m.p.h.

Rain whips out in a 12-inch-per-hour deluge. The curtain wall unit shudders, bends under this man-made blast . . . *but doesn't leak.* WEATHERBAN Brand Curtain Wall Sealer seals its seams.

The purpose of this torturing, simulated weather test? To *prove* the weather-tightness of this WEATHERBAN sealed curtain wall, even under the lash of hurricane fury.

This new curtain wall sealer is a two-part polysulfide rubber-based compound. It cures *chemically* without shrinkage into a durable, solid rubber seal. It stretches, compresses with wall movement, adheres strongly to glass, stone and metal.

Here's why WEATHERBAN Sealer is being picked to seal new buildings . . . why it's being chosen also to repair leaks in older buildings originally sealed with conventional sealers.

**SEE WHAT WEATHERBAN SEALER OFFERS YOU!**
Consult 3M Research. Send for free brochure. Write on your company letterhead to: 3M, Dept. 39, 417 Piquette Ave., Detroit 2, Michigan.

PRODUCT OF 3M COMPANY RESEARCH

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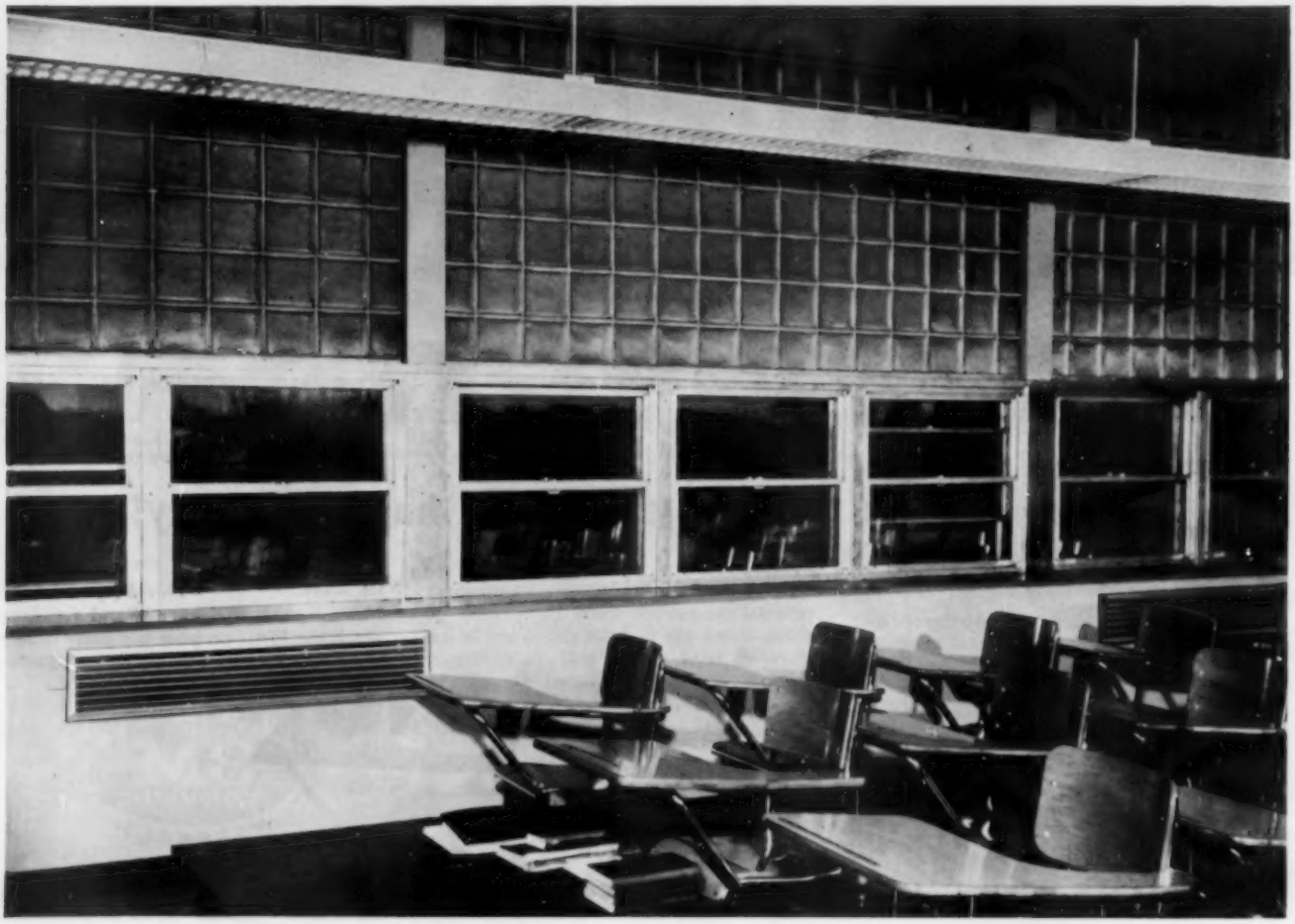
417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • EXPORT: 99 PARK AVE., NEW YORK 16, N. Y. • CANADA: P. O. BOX 757, LONDON, ONT.

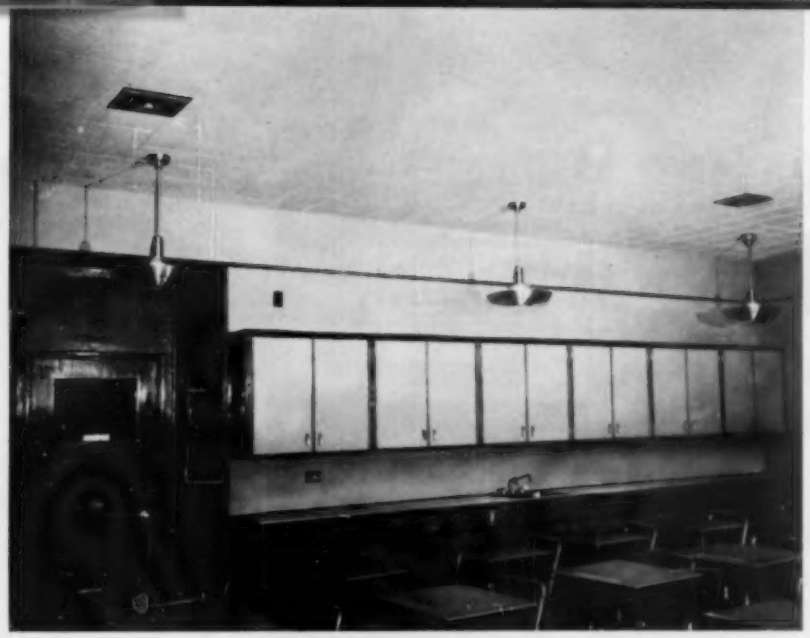
# How high velocity provides maximum comfort for schools

The *Anemostat All-Air High Velocity* system of draftless air distribution offers many important advantages for heating and ventilating schools. • High velocity units, used with smaller than conventional ducts, save space and money. They substantially reduce sheet metal required, can be installed faster, at less cost. Since there are no coils in All-Air HV units, clogging and odors are eliminated. • Anemostat *All-Air HV* operate entirely with air processed in the main equipment room; there is, therefore, no need to break through the walls of the building for prime air make-up. The Anemostat *All-Air HV* units eliminate fans, filters, and electric motors in the school rooms. Units are quiet, need a minimum of maintenance from custodians. • On these pages are typical installations in which the *Anemostat All-Air High Velocity* system has been used successfully. Application data on your specific school heating, ventilating or air conditioning problem is available from Anemostat representatives or from the home office.

**Architects—attention please:**

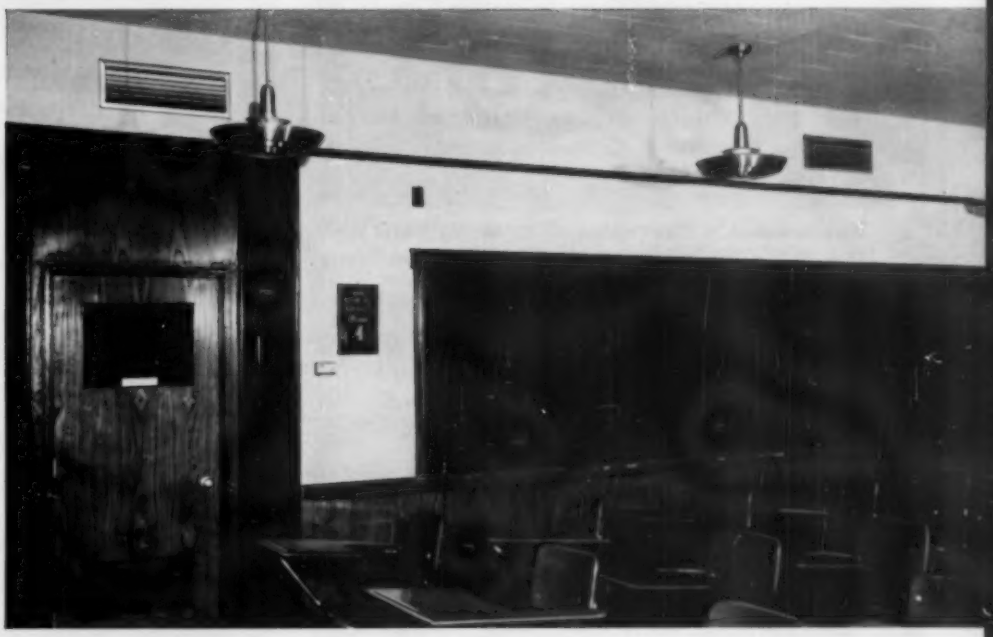
Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.





In this schoolroom Anemostat Type E Square Air Diffusers are installed in the ceiling.

Here Anemostat SLW Straightline Air Diffusers on the high sidewall provide draftless comfort.



Note the Anemostat UTW Straightline Air Diffuser located under the window in this classroom.

Anemostat UTW Straightline Air Diffusers are placed under the windows in this school laboratory.

Write on your business letterhead for your copy of

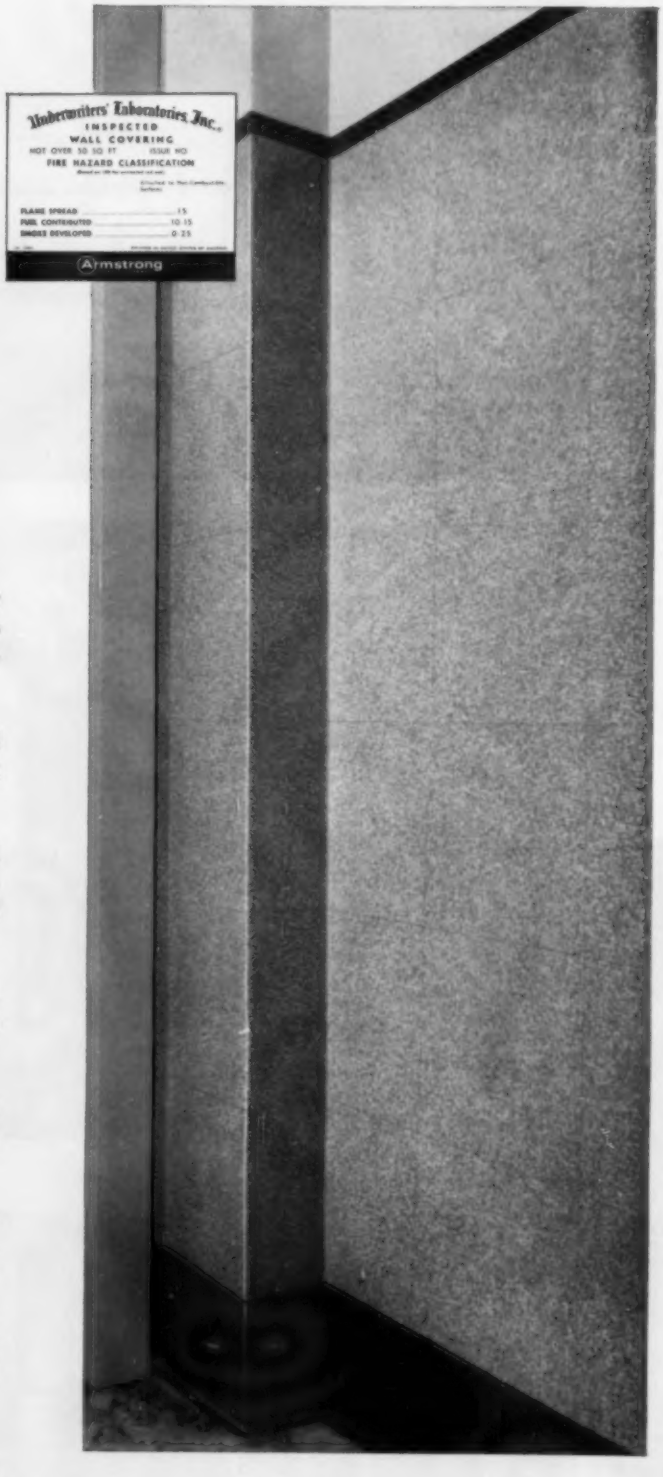
*New Anemostat Selection Manual 60*

to Anemostat Corporation of America, 10 East 39th Street, New York 16, N. Y.

**ANEMOSTAT: The Pioneer of All-Air High Velocity Systems**

# FIRE RESISTANT

## new Armstrong VINYL WALL TILE for practical, decorative beauty




Armstrong Vinyl Wall Tile is a wonderful new interior finish for use in school corridors, lavatories, and lab rooms . . . for hospitals, restaurants, institutional buildings, and all types of commercial interiors.

**Fire resistant** . . . Each carton of Armstrong Vinyl Wall Tile carries Underwriters' Laboratories Label listing fire hazard classification of the product.

**Economical** . . . Costs only 45¢-60¢ per sq. ft. installed over structurally sound plaster or plasterboard. It's economical to maintain, too. The satin-smooth vinyl never needs refinishing, is easily wiped clean.

**Resists soiling, abrasion, scratching** . . . The tough vinyl surface is extremely durable and highly resistant to grease and alkalis.

**Dimensionally stable** . . . Won't shrink, curl, or sag with heat. Armstrong Vinyl Wall Tile is not subject to stress relief as a result of heating.

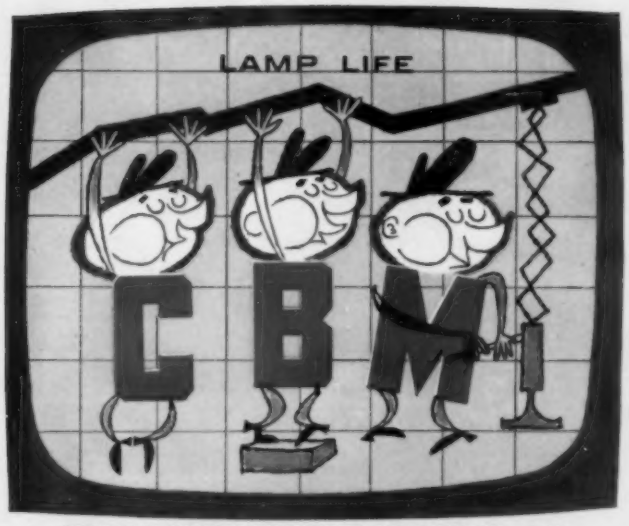
**Flexible** . . . Easily conforms to wall contours. Can be fitted to both inside and outside corners, thereby reducing installation costs.

**9 fade-resistant colors** . . . Armstrong Vinyl Wall Tile is available in nine handsome colors . . . in 1/16" gauge, 9" x 9" tiles.

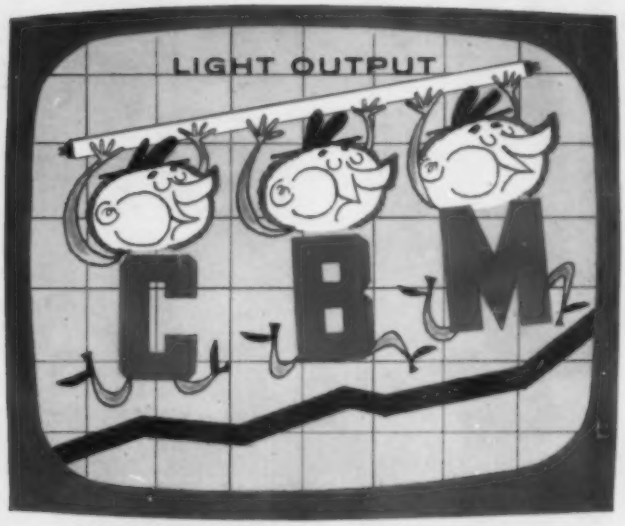
For information, samples, complete specifications, design and color schemes assistance, call the Armstrong Architectural-Builder Consultant in your nearest Armstrong District Office or write direct to Armstrong Cork Company, 1009 Watson Street, Lancaster, Pennsylvania.

Armstrong
CORK COMPANY
FLOOR DIVISION
LANCASTER, PENNSYLVANIA

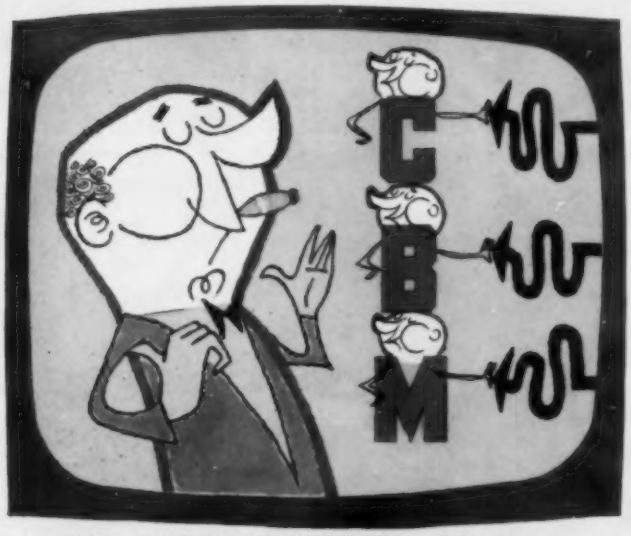
# Why CERTIFIED CBM BALLASTS mean fluorescent lighting that really measures up!




**YOU GET PEAK LIGHTING PERFORMANCE** with CERTIFIED CBM BALLASTS in fluorescent fixtures. And you assure customer satisfaction just as you planned because . . .




**CERTIFIED CBM BALLASTS** are built to exacting "specs" to give quiet operation and High Power Factor along with assured ballast life, optimum light output, and rated lamp life. And they *all* carry the UL label.




**THEY PROTECT YOUR CUSTOMERS . . .** help you, too. Says one lamp manufacturer, "This certification (CBM) assures without individual testing that lamps will operate at values close to ratings."

**"CBM . . . INEXPENSIVE INSURANCE",** says another tube maker. Be sure to specify fixtures equipped with CERTIFIED CBM BALLASTS and write for "Why it pays . . ." booklet today!

Not *all* ballasts are the same . . . Certified CBM ballasts are "tailored to the tube". Insist on CBM ballasts, *certified by ETL*, in the fixtures you choose.

CBM CERTIFIED by ETL

*Seven leading manufacturers now make up*

## CERTIFIED BALLAST MANUFACTURERS

2116 KEITH BUILDING • CLEVELAND 15, OHIO

**Participation in CBM is open to any manufacturer who wishes to qualify**

# Striking design

# with LUPTON metal windows

Penncrest Senior High School, Lima, Pa. Architects & Engineers: The Ballinger Co., Philadelphia, Pa.; General Contractors: Wallace Engineering & Construction Co., Bryn Mawr, Pa. All photographs by Cortlandt V. D. Hubbard.

## New Penncrest Senior High School at Lima, Pennsylvania, matches bold design with maximum light and air

LUPTON Master Projected Aluminum Windows provide all-weather ventilation, deflect drafts, and provide various degrees of opening. Simplicity of hardware makes them easy to use, inexpensive to maintain.

A brilliant illustration of the harmony of fresh and forceful design with functional need is shown in the modern Penncrest Senior High School at Lima, Pennsylvania.

The use of LUPTON Master Projected Aluminum Windows helped make this "dream school" a practical reality. The strong horizontal lines and narrow mullions of these windows integrate exactly with the design intention. Their unobstructed areas, all-weather ventilation, lower initial cost, and lower maintenance costs make them a perfect choice for practical function.

For more than 75 years, LUPTON has been providing the finest metal windows to the country's leading architects for use in schools, hospitals, and other modern buildings. You'll find complete information in the Flynn catalogs in Sweet's *Architectural File*. To locate your nearest representative, look for the name LUPTON in the Yellow Pages under "Windows—Metal." Or write or wire.

# LUPTON

**METAL WINDOWS • CURTAIN WALLS**

**MICHAEL FLYNN MANUFACTURING COMPANY**

**MAIN OFFICE AND PLANT: 700 E. GODFREY AVE., PHILA. 24, PA.,**

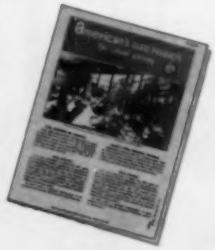
# USE american's SHEET GLASS

## in schools for "daylighting with a purpose"

*Heathcote Elementary School, Scarsdale, N. Y. Architects: Perkins & Will*

Large glass areas providing natural daylight are the primary sources of obtaining good school lighting. Since the amount of daylight varies with climates, it is very important to select the proper glass. If maximum daylighting is desired, use AMERICAN LUSTRAGLASS or LUSTRACRYSTAL which transmits more visible light than any other brand of glass. Where a more controlled daylight is necessary to reduce glare, use AMERICAN LUSTRAGRAY for balanced brightness. In most cases, a planned use of both glare-reducing and clear glass in schools will give maximum quality illumination and protect the eyes of both students and teachers.

Large glass areas also act as a stimulant to learning, by creating a more spacious and cheerful atmosphere. Glass walls cost less than walls of other building materials and require less maintenance. It will pay you to investigate now.



**Write us today for new four-page catalog, "American's Glass Products for School Glazing." It includes useful tables showing goals for proper daylighting. Get this new catalog for your file. It's free.**

**For controlled daylighting on any school exposure where glare is a problem, use**
**american LUSTRAGRAY**
**for balanced brightness**

MODERN GLASS
*Best at a Glance*

american
WINDOW *Glass* COMPANY
PITTSBURGH, PA.

PLANTS: ARNOLD, PA. • ELLWOOD CITY, PA. JEANNETTE, PA. • OKMULGEE, OKLA.

WBW 6844

# . . . the man from Smithcraft

*George Kolbe, manager of Smithcraft's New York City team of Kolbe, Goren and Smith . . . part of the nationwide Smithcraft sales organization.

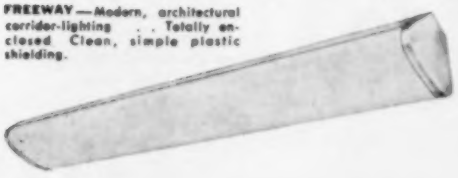
## . . . 4 good NEW ideas in lighting

**CIVIC**—an architectural form . . . shallow, good-looking and in excellent taste. An extruded aluminum-framed unit.

**TWOSOME** — Top value, low cost, shallow and attractive. With new 45° x 45° compound shielding, or with plastic louvers, flanged polystyrene or various types of glass.

**EXECUTIVE** — an all-steel louvered unit; shallow with illuminated, tapered sides. Provides 30° x 45° shielding.

**FREEWAY**—Modern, architectural corridor-lighting . . . Totally enclosed. Clean, simple plastic shielding.



*In addition to the CIVIC and the TWOSOME, Smithcraft's new developments include the EXECUTIVE and the FREEWAY. You'll find all four units useful to you in the planning of lighting for today's interiors.*

He's the man whose experience and knowledge of lighting is backed by Smithcraft's highly diversified line of fluorescent lighting units. The "Man from Smithcraft" can suggest the new *CIVIC*, for example, for interiors requiring the very finest in "prestige lighting". Or he can turn to the brand new top value *TWOSOME* for general office, store or school lighting. Ask the man from Smithcraft to show you Smithcraft's "4 GOOD NEW IDEAS IN LIGHTING".

*Wherever good lighting is important, you'll find . . .*

**Smithcraft** — "AMERICA'S FINEST FLUORESCENT LIGHTING"
CHELSEA 50, MASSACHUSETTS

PLEASE ATTACH TO YOUR BUSINESS LETTERHEAD and mail to

Smithcraft LIGHTING, CHELSEA 50, MASS.

P A 9

NAME _____

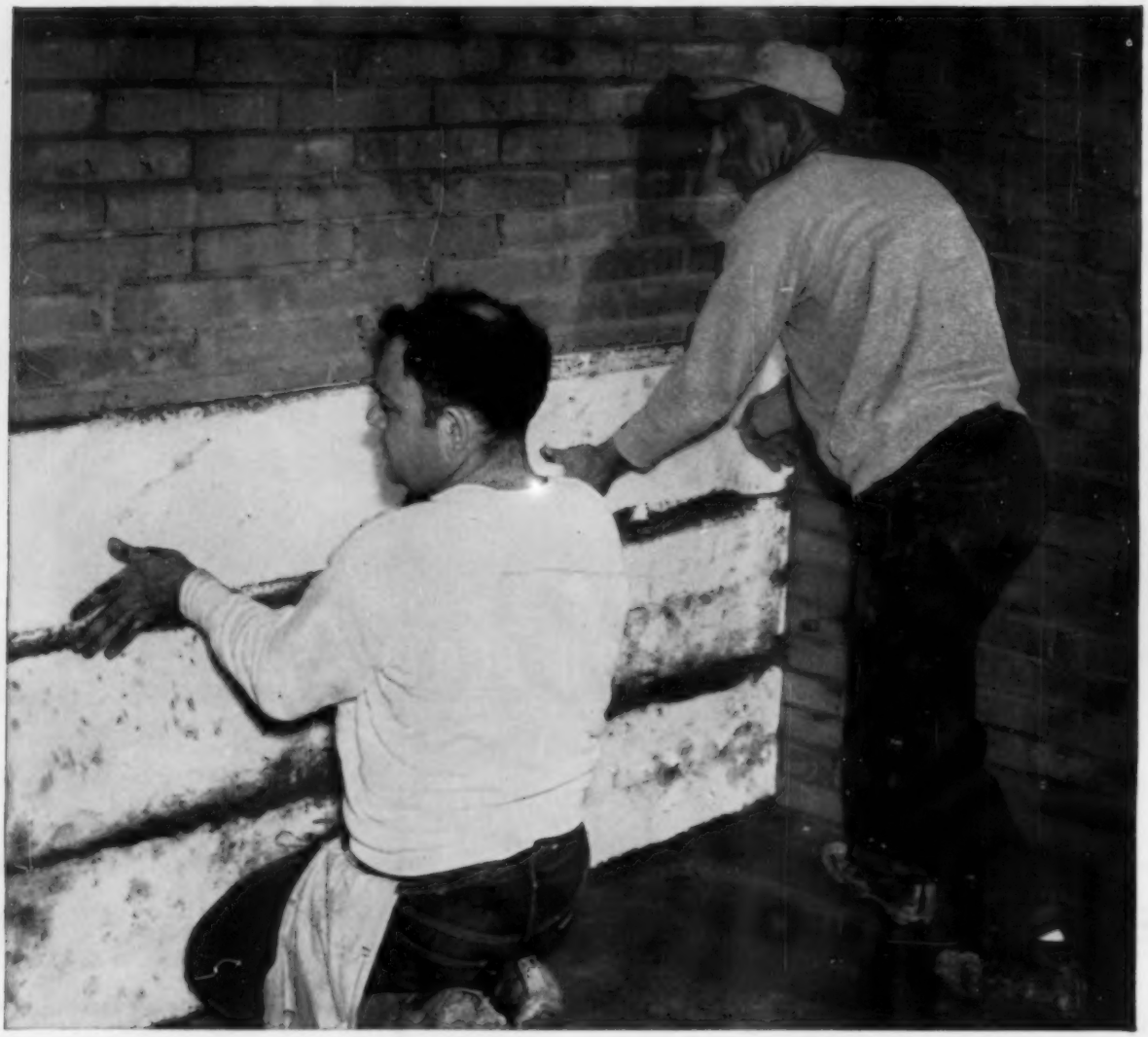
TITLE _____ CO. _____

ADDRESS _____ CITY _____ STATE _____

☐ Please send me the monthly publication, "Light Side of the News", so that I can keep in touch with the latest trends in lighting.

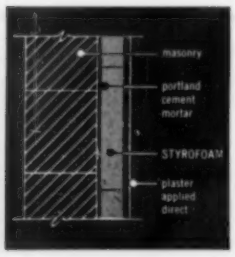
☐ Please send me folders and catalog sheets on the "4 Good New Ideas in Lighting"

☐ Please send me the complete SMITHCRAFT CATALOG, containing data on America's Finest Fluorescent Equipment.



"RIGHT AT THE START," says W. H. Walrod, owner of Walrod Construction Company, Davenport, Iowa, "we save not only the expense of the wood for framing but the time needed to cut and fit the wood. We do away with the cost of installing insulation between studs and we side step the use of metal lath because the plaster keys directly to the Styrofoam* insulation.
"The wall is made up of just three components: exterior brick, Styrofoam and plaster. The use of Styrofoam permits the use of a special large-size brick (12" x 6" x 2⅝") which affords another saving in labor costs."

# Styrofoam® insulation helps Iowa builder erect brick homes on frame-house budget

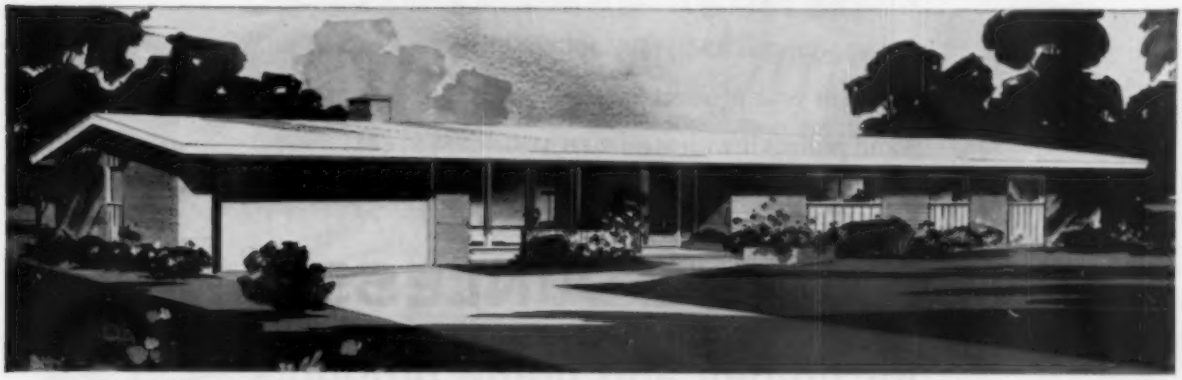



*New masonry-insulation-plaster construction eliminates framing and lathing, reduces handling and installation costs, ups mortgage loan commitments*

"CUTTING AND SHAPING Styrofoam* is almost effortless," says Mr. Walrod. "It can be scored with a knife and snapped off in any desired size."

"STYROFOAM bonds readily to the interior masonry surface. A uniform layer of cement mortar is applied by running the 1' x 9' boards through a coating trough."

"EVERY BUILDER recognizes the importance of lighter, easier to handle material. In this respect you just can't beat Styrofoam! A 10' x 12' room with an 8' ceiling requires about 20 sections of Styrofoam, which can be easily carried by one man in two trips."



FINISHED HOME, all brick veneer and fully insulated, will cost about the same as an identical house with conventional frame construction. The use of Styrofoam (Dow expanded polystyrene) and brick increases loan commitments by mortgage companies an impressive 5%. In 1956, Walrod built several homes using masonry insulation-plaster construction.

**Mr. Walrod's construction costs are available to builders upon request. Write on your letterhead to The Dow Chemical Company, Midland, Michigan, Plastics Sales Department 1737M.**

*STYROFOAM is a registered trademark of THE DOW CHEMICAL COMPANY

YOU CAN DEPEND ON DOW

## better living

When you make anything in metal for homes, kitchens and appliances, and you want enduring beauty and sales appeal in your product . . . design it, improve it and protect it with McLOUTH STAINLESS STEEL.

**specify**

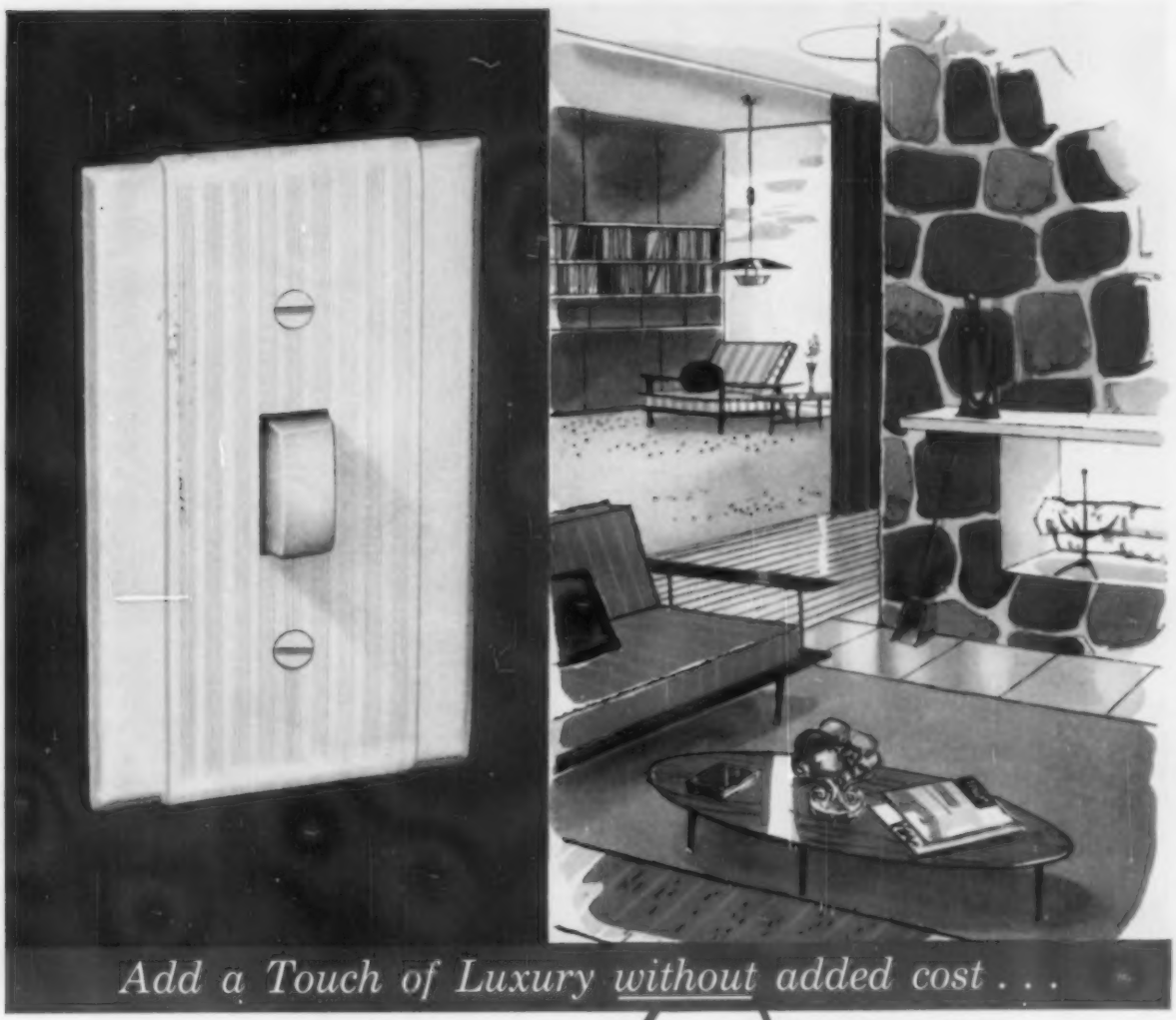
# McLOUTH STAINLESS STEEL

HIGH QUALITY SHEET AND STRIP

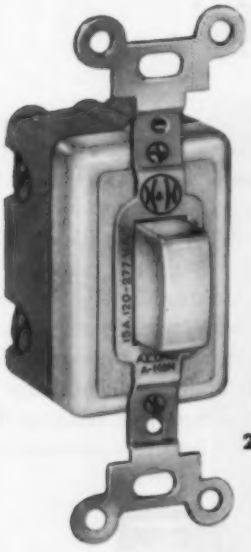
**for homes and home products**

McLOUTH STEEL CORPORATION DETROIT, MICHIGAN

MANUFACTURERS OF STAINLESS AND CARBON STEELS



*Add a Touch of Luxury without added cost . . .*



NO. 2891-I

THE NEW ARROW·HART Quiette TAP ACTION SWITCH

Smartly modern in appearance, ultra-functional in operation, this new switch operates quietly with the gentlest pressure on any area. There's no toggle to flip . . . no knob to twist.

And on the purely practical side, the Arrow-Hart Quiette Tap Action Switch is built for a lifetime of safe, dependable service, controlling appliances and incandescent or fluorescent lights. Available in brown or ivory . . . *and, at the cost of a standard toggle switch.*

**• UL APPROVED • H&H SPECIFICATION GRADE . . . rated 15 and 20 amps, 120-277 volts, ac only • SCREWLESS TERMINALS OR BINDING SCREWS • FITS ANY STANDARD TOGGLE WALL PLATE . . . ideal for both modernization and original installations.**

*Free folder (Form No. A-266) describing the Quiette Tap Action Switch is available by writing to The Arrow-Hart & Hegeman Electric Company, Dept. PA, 103 Hawthorn Street, Hartford 6, Connecticut. Offices, Sales Engineers and Warehouses in Principal Cities.*

ARROW AH HART

*Quality since 1890*

WIRING DEVICES • MOTOR CONTROLS • ENCLOSED SWITCHES • APPLIANCE SWITCHES

*Architect:* Perry, Shaw, Hepburn & Dean, Boston; *structural engineer:* Maurice A. Reidy, Boston; *builder:* McCloskey & Co., Philadelphia.

# PHILADELPHIA'S NEW SHERATON HOTEL HAS 16 STORIES OF OPEN-WEB JOISTS

Centrally located in downtown Philadelphia's Penn Center is the magnificent new Sheraton Hotel, opened to the public early in 1957.

The new Sheraton provides 1,000 guest rooms, with one floor, the twenty-first, entirely given over to balconied luxury suites. Parking for guests' automobiles is handled in a 1,000-car garage just across Pennsylvania Boulevard, and connected to the hotel by an underground concourse.

Bethlehem Open-Web Steel Joists were used in the floor construction of the new Sheraton Hotel from the sixth floor to the twenty-first floor, inclusive.

The advantages of using Bethlehem Joists were many. They were delivered to the job site tagged and ready for immediate placing, with no delays to the construction schedule. They required only field welding to secure them permanently in place, forming a rigid, permanent floor structure, which will help to hold future maintenance to a minimum. And used in combination with floor slab and plaster ceiling, Bethlehem Open-Web Steel Joists help provide a fire-resistant building construction.

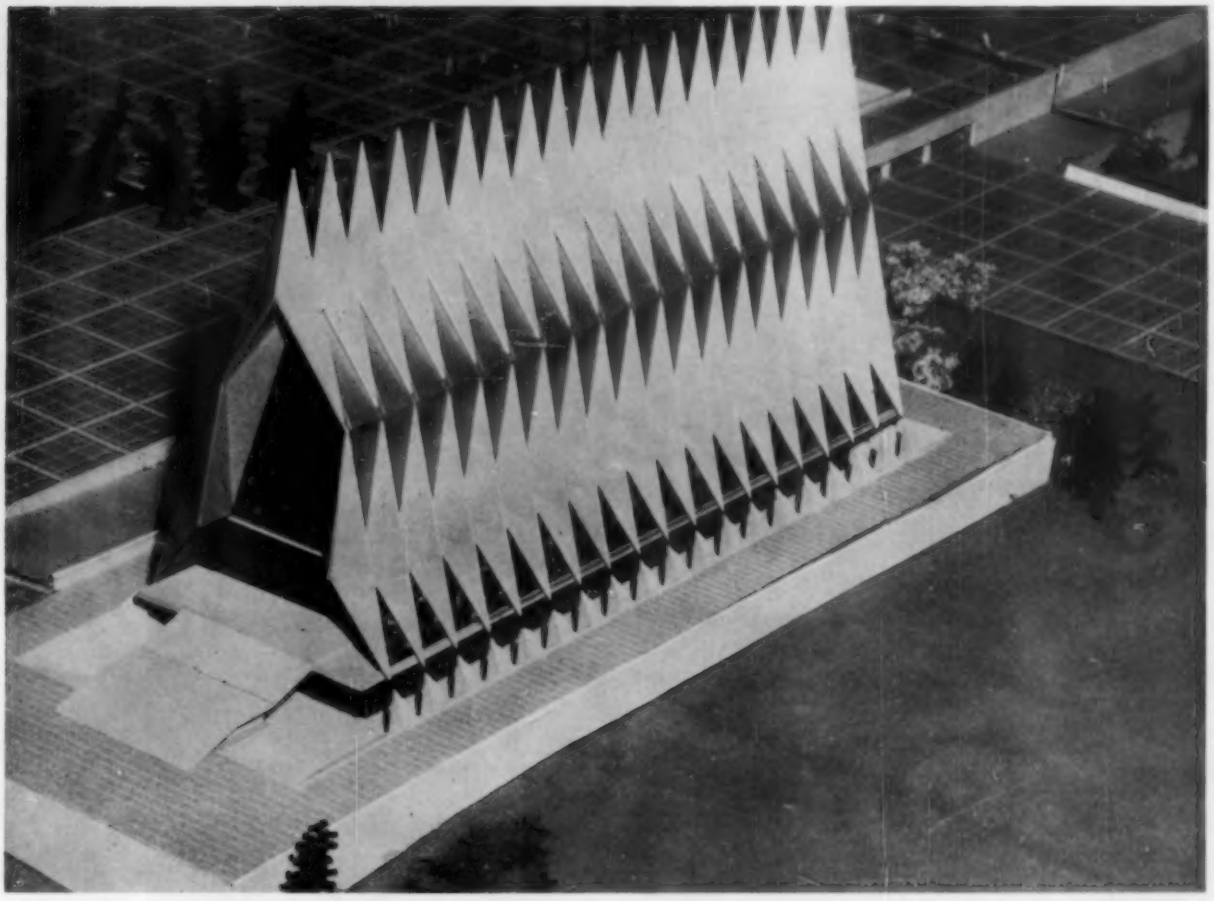
Bethlehem Open-Web Steel Joists, Shortspan Series, conform in all respects to the Steel Joist Institute Standard Specifications for Open-Web Steel Joist Construction and they are fully approved by the Steel Joist Institute. They conform, also, to the Simplified Practice Recommendation R94-53 of the Department of Commerce.

**BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.**

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

**BETHLEHEM OPEN-WEB STEEL JOISTS**

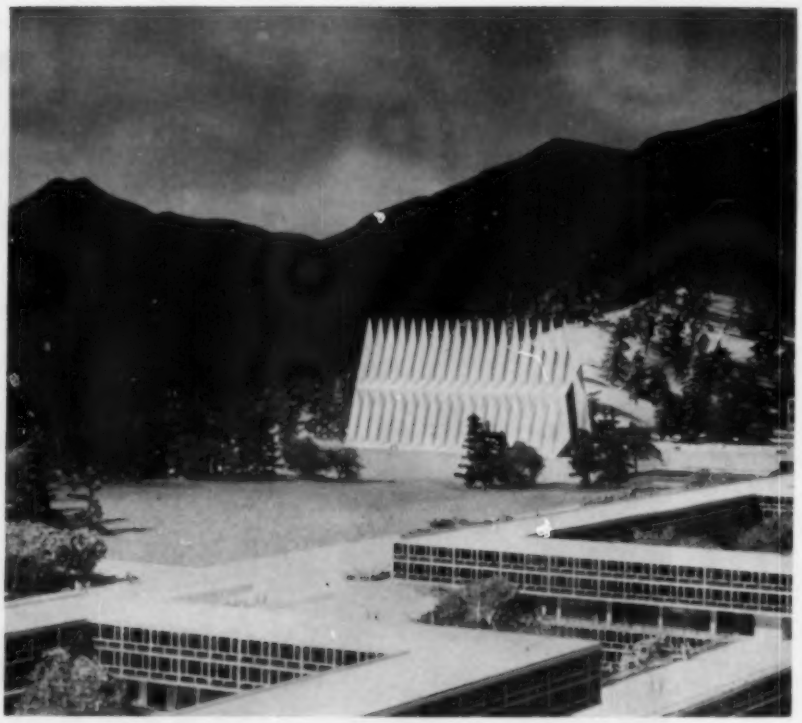
BETHLEHEM STEEL



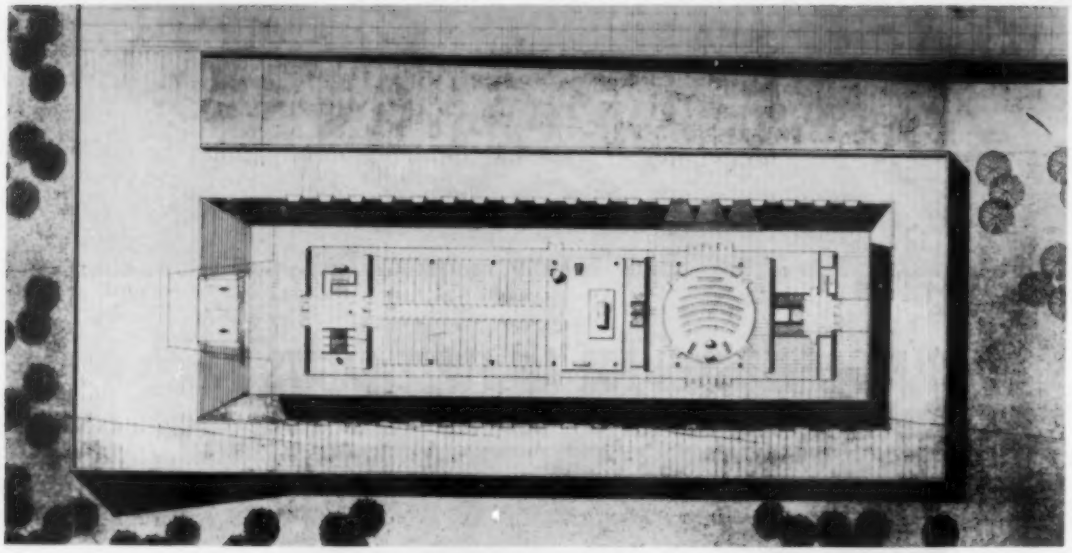
Official U. S. Air Force Photo

# CHAPEL REDESIGNED FOR AIR FORCE CADETS

Photo of A. W. Edwards' rendering; R. H. Murray Associates



Ezra Stoller



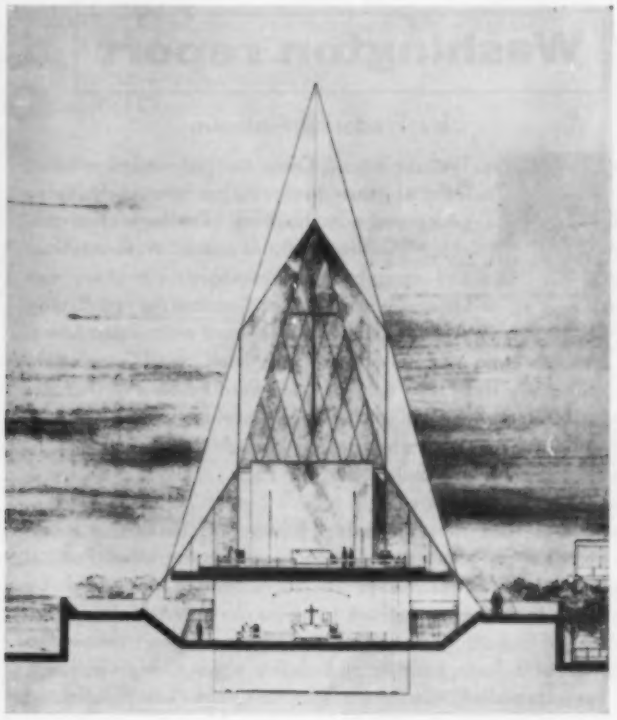
*Lower level*

Latest unit to receive House approval for construction on the Colorado Springs campus of the new Air Force Academy is the interdenominational Chapel (Skidmore, Owings & Merrill, Architects) designed by SOM Partners Gordon Bunshaft and Walter A. Netsch Jr. At time of going to press, authorization for the Chapel and funds for its construction were still pending in the Senate.

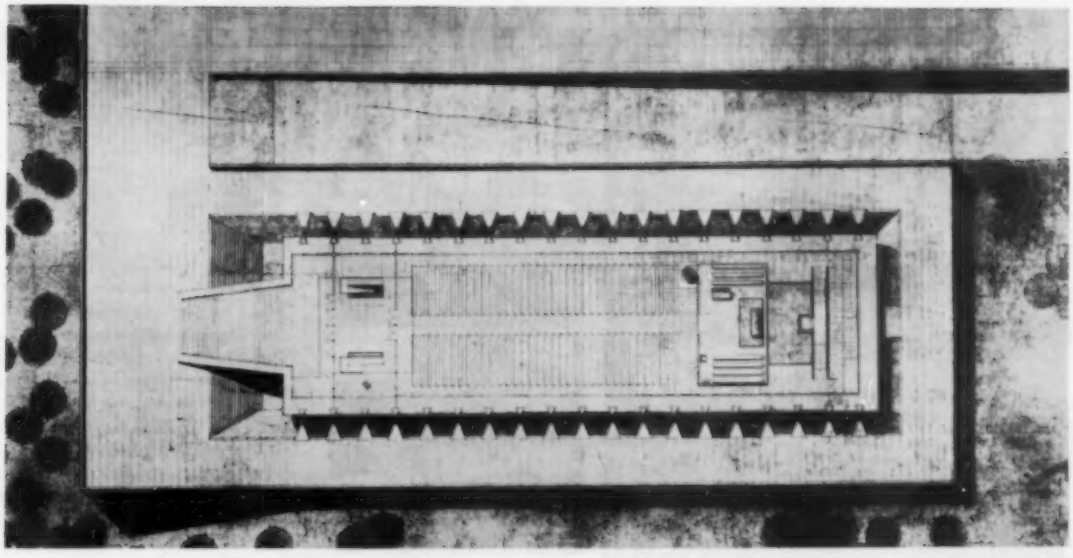
Located on a separate podium but designed as an integral part of the Academy's Court of Honor (including the Administration Building and Social Hall), the Chapel, with its 19 spires (the points of which are formed by abutted pairs of the topmost of the 112 interlocking tetrahedrons that constitute the building envelop), will be boldly silhouetted against the backdrop of mountains of the Rampart Range. A long ramp along the west side of the Chapel leads up from the Court of Honor to a south-facing terrace, where all worshipers may congregate and from which they proceed to their respective Chapels.

Within the multifaceted enclosing envelop, houses of worship are arranged on two levels—the Protestant Chapel for 900 on the upper level; the 500-seat Roman Catholic Chapel and the Jewish Chapel for 100 on the floor below. All, however, have exterior window areas, due to the moatlike, masonry bowl within which the Academy Chapel is to be built. Separate monumental stairs lead from the terrace level to each of the three congregations.

The tetrahedral elements of the structure rest on and are hinged to concrete abutments that occur at intervals along the sloping granite wall of the surrounding "bowl." Each arch or spire consists of four pipe-framed tetrahedrons (two



*Upper level*



on each side) with the upper pair joined (like hands in prayer) to form the point. The tall, narrow, triangular surfaces of these aspiring tetrahedrons face inward, while the two long, shallow triangular surfaces join in a ridge to form the clean, sloping edges apparent in the model photograph. Between adjoining spire frames, at an intermediate level, are closing tetrahedrons inserted in the opposite direction from those that form the tall spires—the two, tall triangular surfaces, on the exterior; the long, ridged fin facing inward. It is proposed that the tetrahedral elements be sheathed with aluminum, insulated on the exterior face and perforated (for sound control) on the lower portion of interior surfaces.

In the Protestant Chapel (rendering, first page), spaces under the sloping surfaces of the tetrahedrons along the sides are not suitable for aisles; this space is, therefore, reserved for memorials, and the radiant-heated floor of the Chapel proper is raised above the structural floor, articulating the nave from the memorial areas. Model studies indicate that light reflected from the colored glass (triangular areas at base; borders of colored glass around the alternating tetrahedrons in the upper area) "imparts an exciting fusion of the light and structure." The large glass windows at either end allow little light transmission, producing a muted glow.

In approaching the design of the Academy Chapel, the architects strove to express in the enclosing envelop "both strength and lightness inherent in today's technology." Development of the tetrahedrons, worked out in close cooperation with SOM Structural Designer Kenneth Naslund, "came about in the search for a simple, repetitive form that would enclose the volume."

# Washington report

by Frederick Gutheim

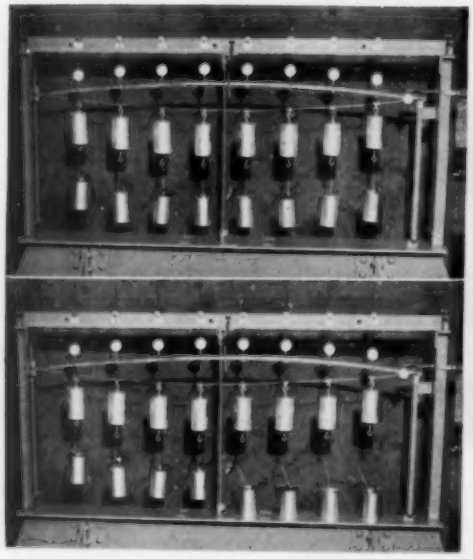
The session of Congress just ended offered little of more than routine interest to those concerned with building. The legislative machinery went round and round. Authorizations and appropriations emerged: but there was little change in the direction of continuing building programs, and almost no forward movement. Measures affecting the national capital, itself, were handled in an equally lack-luster manner. It is hard to believe that the issues Congress dealt with—to say nothing of those it did not even touch—are as devoid of political opportunity as the legislators seem to think.

Perhaps their most important action was to kill the lease-purchase program. The failure to enact any other Federal building program reinforced fears, earlier expressed by AIA, that the action on lease-purchase would be tantamount to halting all Federal building work (and this in the face of a huge backlog of building needs Congress, itself, has established). But there was no doubt that it reflected not only Congressional dissatisfaction with the lack of performance under the lease-purchase program, but also a growing dislike of the method. The stalemate which developed was between factions headed by Rep. Bob Jones (D., Ala.), Chairman of the House Public Works Committee, who proposed to kill lease-purchase and authorize direct construction of the 146 building projects which GSA had been authorized to undertake; and a "lease-purchase at any price" group, which proposed to make the program work by removing the limits on interest rates for building money.

The failure, once again, to enact a school-construction bill was due to aggressively raised racial issues. Certainly the situation was complicated by the pending civil rights bill—and this concealed the progress made by the NEA and other proponents of Federal aid to schools. Some favorable action by the next Congress (if not in the next session) now seems quite likely.

As for measures affecting the District of Columbia, Congress did little better. The proposed tunnel-or-bridge at the Lincoln Memorial was thrown back into the laps of the District Commissioners. No action was taken on the proposed civic auditorium and cultural center. A site was authorized for a pending municipal stadium, but none of the

# ROEBLING'S SUSPENARCH DEMONSTRATED



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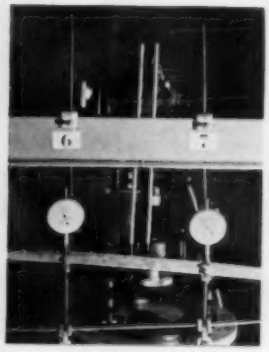


3

*Under unsymmetrical loading* (**2** *and* **5**), *the right half of the arch humps up due to negative bending moment—causing tension in the top of the arch and elongation of the tensile fibers. This phenomenon is observed and measured* (**3**). *Under uniform load, the two wires indirectly attached to the top of the arch are parallel; under unsymmetrical loading they become non-parallel. Their divergence can be measured by the reticle in the optical instrument behind.*

Trenton, N. J., July 31—At John A. Roebling's Sons, a structural concept that has been a-hatching for 20 years—the "suspenarch"—forced its confining shell and the cracks indicate that the last impasse before becoming a structural reality has been overcome. A 6½-foot wide, 1:20 scale model of a suspenarch—representing a span of 127' and depth of 8½'—was successfully demonstrated before a group of architects, engineers, and the technical press.

Suspenarch, originally conceived by Paul Chelazzi—creative, imaginative yet down-to-earth architect-engineer whose only mathematical insistence is that the designer keep his three basic forces of statics in equilibrium—consists of an arch member with an upward arc whose springings are connected by a cable having a downward arc with a sag equal to the rise of the arch. Arch and cable are separated by struts at several panel points (**1** and **2**).*

Tests performed on the model indicated the behavior of the arch under conditions of uniform loading and the effects of unsymmetrical loading. According to Blair Birdsall, Chief Engineer of Roeblings's Bridge Division, who conducted the

* "Structures in Membrane on Co-acting Ribs," JULY 1956 P/A.

other problems surrounding this venture have been solved. Federal office buildings in the capital area were excluded from the over-all row on lease-purchase. These and other construction here make up a total of something upwards of $300 millions worth of work.

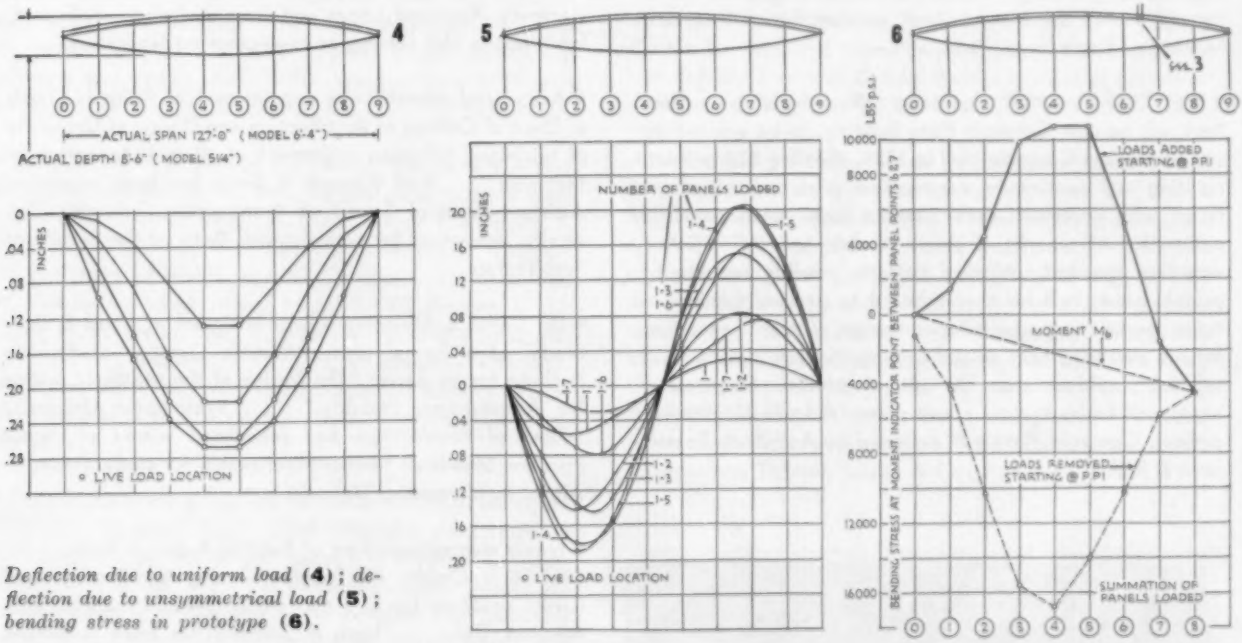
Under construction are the following projects:
Atomic Energy Commission, Germantown, Md.—$13,000,000
Central Intelligence Agency, Langley, Va.—$46,000,000
National Security Agency, Fort Meade, Md.—$70,000,000
State Department Building—$57,400,000
Senate Office Building—$23,446,000
House Office Building—$64,000,000
International Monetary Fund—$4,000,000
St. Elizabeth's Hospital, Maximum Security Building—$5,118,000
Howard University, Men's Dormitory—$1,400,000
Gallaudet College buildings—$1,835,000
National Institute of Health, Bethesda, Md.—$12,500,000

In the planning stage, with construction authorized:
National Institute of Health, Bethesda, Md.—$3,700,000
National Library of Medicine, Bethesda, Md.—$8,000,000
Federal Office Buildings, Washington, D. C.—$91,480,000
Bureau of Standards, Gaithersburg, Md.—$75,000,000

In the development stage:
Court of Claims Building, Capitol Hill

An experimental house incorporating many newly developed building materials, allowing them to be tested and exposed to public acceptance, has just been completed here by the Research Institute of the National Association of Home Builders. Plastic-coated plywood roofing, plastic hardware, a kitchen whose shelves and closets are as flexibly arranged as bookshelves, soilproof-plastic interior finishes are among the novelties.

Another laboratory, of a different sort, is in operation at Woodlawn, Virginia, where the National Trust for Historic Preservation is experimenting with fund-raising devices that should help all charged with the care of historic shrines. One of the most promising innovations is renting the plantation house to members of the Trust for large parties. Another is a successful honor-system snack bar! Woodlawn also sells old recipes, rents its pastures and stables to local horsemen, and has developed other sources of income which, added to the regular admissions charged 75,000 guests annually, has made the property almost self-supporting.




*Deflection due to uniform load* (**4**); *deflection due to unsymmetrical load* (**5**); *bending stress in prototype* (**6**).

demonstrations, "stability of suspenarch can now be verified under both uniform and unsymmetrical loading by this model . . . and an additional approach is provided for those who are studying wide-span structures where column-free space is desirable or necessary."

The prototype suspenarch—which the model represents—consists of two 15 I 50's and two 2" diam, galvanized bridge strands; properties are obtainable from the handbook. (In a model of this scale, it is almost impossible to make both the area and moment of inertia of the arch exactly to scale; in this case the moment of inertia is to scale. For similar reasons the section modulus is not exactly to scale.) Prototype dead load is 70 psf, or 16,800 lb per panel; prototype live load is 40 psf, or 9600 lb per panel. Equivalent dead load of model is 31.4 lb per panel and 17.9 lb for the live load (weight of each added cannister in **1** and **2**).

Test results are illustrated: uniform load (**4**); unsymmetrical loading (**5**); bending stress in prototype (**6**). The demonstration not only conclusively proved the validity of the suspenarch concept, but also implied that spans of much greater magnitude may be accommodated.

BURTON H. HOLMES

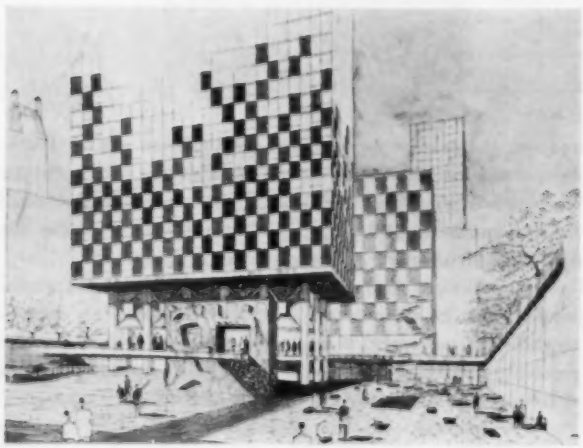
# p/a news bulletins

• University of Illinois has received research grant of $17,425 from Lumber Dealers Research Council for analysis of problems connected with development of improved framing systems. Study will emphasize shop-controlled fabrication components and will include structural design of roof components, assembly techniques, effect of materials on time and cost.

• United States will be represented this fall at IV Bienal do Museu de Arte Moderna in Sao Paulo, Brazil, primarily by exhibition of paintings and drawings by the late Jackson Pollock. . . . Architects are invited to submit exhibits of school buildings for Architectural Exhibition of School Buildings at Regional Conventions of the American Association of School Administrators, to be held in various cities early in 1958. Closing date is Sept. 16. Information from: Dr. Shirley Cooper, 1201 16 St., N.W., Washington 6, D. C.

• Peter Muller-Munk has been named president of International Council of Societies of Industrial Designers at recent organization meeting in London. Other officers of newly formed council are Mischa Black, London; Enrico Peressuti, Milan; and Pierre Vago, Paris.

• First "truly colorful" skyscraper office building in New York will be new Carnegie Plaza Building, to be erected on site of present Carnegie Hall in 1959. Costing $22 millions, building will feature in construction prefab steel panels faced with porcelain, each 2-stories high. Each panel of entire skin will consist of single window and satin-finished vermilion spandrel. Window pattern, possible because of prefab panels, will be checkerboard to provide flexible interior partitioning and exterior design. Other innovations include overhead heating and cooling. Sunken plaza (below) will form outdoor area for cultural exhibits. Street level access will be by bridges across plaza. A Louis J. Glickman project, Carnegie Plaza was designed by Architects Pomerance & Breines.



• 1957 Interbau International Building Exhibition, July through September, includes a whole new city rising on bombed-out Hansa district of Berlin (NEWS SURVEY, August 1956 P/A). Designs of 57 architects from 12 nations are part of the rebuilding program. Most of the buildings are now completed. Photo (above) shows 9-story apartment block designed by Walter Gropius (foreground); also apartment dwellings by Pierre Vago, France; Alvar Aalto, Finland; Oscar Niemeyer, Brazil; Gustav Haaenpflug, West Germany, Raymond Lopez and Eugene Beaudouin, France. Exhibition is also serving as town-planning laboratory.

• Announced recently was appointment of Philip N. Youtz as Dean of College of Architecture and Design at University of Michigan, following retirement of Wells I. Bennett from that post. . . . Prof. Kenneth A. Smith has been appointed Assistant Dean of School of Architecture, Columbia University, announces Leopold Arnaud, Dean of the Faculty of Architecture.

• Dr. David B. Steinman will be recipient of Louis E. Levy Medal at a formal presentation in October at Franklin Institute for his paper, "The Design of the Mackinac Bridge for Aerodynamic Stability." . . . Washington University School of Architecture has announced winner of James Harrison Steedman Memorial fellowship for study abroad—Alfred A. Hermeling, St. Louis.

• Newly elected president of Building Research Institute for 1957-58 is Charles H. Topping, Senior Architectural and Civil Consultant for E. I. du Pont de Nemours & Co., Wilmington, Del. . . . Louis B. Fontana has been re-elected president of NAAMM. . . . Armour Research Foundation of IIT has appointed Hale J. Sabine as senior physicist. Sabine will specialize in acoustical-materials research.

• Eugene Schoen, Architect and Interior Designer, 1931 winner of Gold Medal of The Architectural League of New York, died August 16 in New York.

• Jan Hurd Pokorny, Architect and Author, has been named Assistant Dean of Evening Classes at Columbia University School of Architecture, succeeding Bruno Funaro, who died in New York, August 12.

• Construction has begun on Washington Square Village—redevelopment project in New York. Project will cover almost twelve acres, consist of three residential and supporting commercial buildings (above), landscaped areas, playground and parking facilities. Apartment buildings, which will house 2004 families, will be almost three blocks long, faced with glazed brick featuring panels of blue, yellow, lavender. Balconies are integrated with design of exterior and interior layout. Four-acre space will separate each residential building from next. Architects-engineers for project are S. J. Kessler & Sons; consultant for site planning and design, Paul Lester Weiner. Construction is scheduled for completion summer, 1960.

• Recipients of 7th Annual IDI Design Awards are Arthur N. Becvar and Robert W. Blee, for design of General Electric Kitchen Center; Virgil M. Exner, Henry T. King, H. T. Bannister, C. C. Voss, Carl Reynolds, and Robert Bingman, for continuity of design in 1957 Chrysler Corp. cars; Carl W. Sundberg, Montgomery Ferar, R. W. Figgins, U. U. Pepin, H. F. Weber, and Eliot Noyes, for IBM Ramac and for imparting architectural quality to integrate with contemporary office design. Awards represent achievement in three spheres of U. S. economy—transportation, electronics, the home.

• BRI plastics study group will be conducted at Washington University, St. Louis, Sept. 17-18. BRI also plans research conference on "Adhesives and Sealants in Building" in Washington, D. C., Dec. 4-5. . . . National Housing Center will sponsor meeting of leading home builders and manufacturers of building materials to discuss mutual needs and problems in San Francico, Sept. 12.

• Radiant Heating and Cooling Institute has been formed by licensed radiant-heating contractors and engineers. Headquarters will be in Los Angeles. . . . First annual Congress on Better Living, sponsored by McCall's Magazine, will meet in Washington, D. C., Oct. 9-11. Purpose is to find out what features the American woman wants in a house.

• Building Research Advisory Board Committee has been formed to advise the FHA on its technical studies program. Committee will aid in organization of known technical problems to establish priorities and to suggest solutions to critical problems. Chairman of BRAB Advisory Committee is Albert G. H. Dietz, Professor of Building Engineering and Construction, MIT.

• Edward D. James, Indianapolis architect, Elmer J. Manson, Lansing, Michigan, architect, and Prof. Frederick W. Edmondson of Cornell have been elected to the University's College of Architecture Council. . . . Effective Sept. 1, Robert Bruce Lytle, Jr., will join faculty of the University of Michigan College of Architecture as Assistant Professor of Architecture. Guy J. Palazzola and William A. Lewis were also appointed Assistant Professors of Art, effective same date.

• New York Chapter, AIA, is accepting applications for 1958 Arnold W. Brunner Scholarship. Closing date: Nov. 15. Information from: Chapter Office, 115 E. 40 St., New York 16, N. Y. . . . Competition is now open for Fulbright Scholarships for architectural study abroad in 1958-59. Information from: Institute of International Education, 1 E. 67 St., New York 21, N. Y.

• UCLA will hold first Indoor Climate Design Institute conference, Sept. 12-13, under sponsorship of university's School of Engineering. . . . International Summer Seminar of Architecture, formerly International School of Architecture, CIAM, will hold fifth meeting at the Instituto Universitario di Architettura of Venice, Italy, Sept. 7-28. . . . "Cellular Plastics in House and Home" will be theme of second annual one-day conference of Cellular Plastics Division of Society of Plastics Industry, Inc., to be held Oct. 16 in New York.

• New 14-story Wilshire Terrace Apartments (below) in Los Angeles will feature luxury indoor-outdoor living with single-home privacy. Most outstanding feature of proposed design is 18'x18' outdoor patio for each apartment. Focal point of entire living area, patio will be two stories high to give sky view; patio will be screened from sight of adjoining apartments. Spaciousness of patio is obtained by staggering alternate floors by half-apartment units, also providing various sizes in individual units. All rooms open onto patios by sliding doors; only kitchen and dressing rooms are above patios. Architects for project are Victor Gruen & Associates; constructors, Tishman Realty & Construction Co., Inc.

# p/a financial news

by William Hurd Hillyer

A new dimension in architectural financing has been realized, by way of a mile-long rooftop speedway over stores and office buildings in the heart of Tokyo, Japan. The combination of transport and housing, as exemplified by yester-year's London Bridge, was demonstrated before Shakespeare's day, but there is an element of novelty in actually "basing" the highway on the houses as an integrated project, spurred by downtown-traffic congestion. Though built over the emptied, government-owned Imperial Canal, the improvement is a private enterprise sponsored by 39 businessmen under the potent egis of the Mitsubishi real-estate empire. About half the renting space is already finished and occupied, in accordance with a two-year completion schedule. Total estimated investment of more than $7 millions is underwritten by tenants and will be amortized by $1 million annual rental income.

• The Federal Reserve Bank of Chicago believes that coming months will see further growth in non-Federal public construction outlays. These have reached new highs during 1957, with schools and civic buildings well represented. Financial support of such edifices has come from a mounting volume of municipal bond sales—$3.5 billions during first six months of the year, as compared with $3.1 and $2.8 billions for similar halves in '56 and '55, respectively, despite oft recurring negative doldrums with which the bond market has had to contend. Currently, it is recovering from perhaps the severest of such periods. Investment demand is "broad and adequate" say latest reports. However, the "Bond Buyer" average reflects the highest yield (and therefore lowest base-point prices) in 22 years.

• "Money can be printed, but capital must be saved," is the timely apothegm of Herbert A. Leggett, Vice-President, Valley National Bank, Phoenix, Arizona, and member of many economic committees. He feels that when the next depression comes it will be largely because businessmen and bankers have failed to mark the difference between "money" and "capital." He might have included professional men in the building-construction field, who in advising their clients may have neglected this important distinction. To say that there will never be another depression, Leggett declares, is the right of no man.

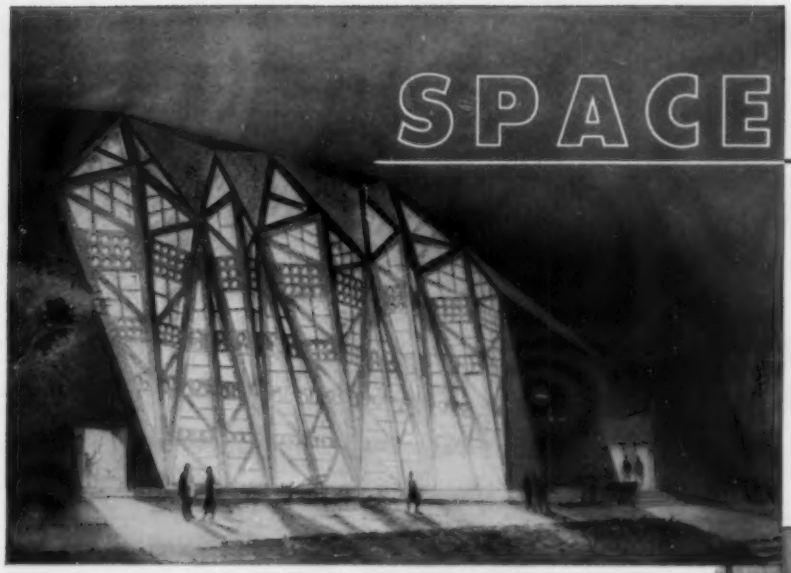
• Two schools of thought dominate the discussion concerning recent and continuing price lift. They are defined, respectively, by Chase Manhattan Bank as the "Cost-Push" and "Demand-Pull" theses. One school asserts that wages have outstripped productivity advances, thus pushing up labor costs and, consequently, prices. The other theorem poses excessive demand as the real problem. In the absence of a demand-pull, it is argued, costs would not rise so much, "since increased prices would reduce sales and lead to unemployment." Both principles, according to Chase Manhattan, have an element of validity; their operation has been simultaneous and therefore mutually restrictive.

The creation of actual capital is, nevertheless, of prime necessity, as we see it. Gross national product is now at the annual rate of $430 billions, and will exceed $1 trillion by 1982 if present trends persist, avers the president of Boston's Keystone Custodian Funds. Meanwhile, a heartening tendency (anti-inflationwise) is noted by the Federal Reserve Bank of Chicago. In its highly industrialized Twelfth District, commercial and manufacturing concerns reduced their indebtedness to Midwest banks by $56 millions during July. Construction loans, despite record activity, were up only $1 million during the week ended July 31.

• Of particular interest to architects, because practically all the loanable funds invested go into residential construction and improvement, is the current upswell in savings and loan assets. Mid-year analysis of the funds held by the 300 largest of such associations in that field, shows a 15% gain since a year ago, thereby pushing the total figures to $16.3 billions. The dollar turnover of all savings and loan associations in the U.S. during the first six months of 1957 included an inflow of $8.4 billions in new savings and an outflow of $5.8 billions. This leaves a net inflow of $2.6 billions as the increase during the half year. By way of contrast, commercial banks increased their holdings of business loans by only $4 billions since mid-'56, compared with a rise of $10.6 billions for the preceding twelvemonth.

• The Government's lowering of down-payment requirements and raising of permissible interest rates on FHA insured mortgages, in an effort to stimulate homebuilding, scores heavily in favor of residential construction. The actual cost to borrowers will be an "open market" function, fixed by supply and demand and implemented by the "discounts" deducted by lenders from the mortgages. The new ground rules set a 2½% discount limit on FHA-insured loans; but nothing, it seems, will prevent the builders from adding the discount figure to the price of the house. Insofar as the revised formula encourages the erection of larger and better dwellings by rendering them easier to purchase, it makes for stability of design in the ever-important residential sector.

• Cheaper money is not yet in sight. Bankers Trust Co. of New York has lifted its "prime" rate on commercial lendings to 4½%—from 4%—and most major banks across the nation have followed that institution's example. Influenced by this rise, various types of commercial borrowings, such as "bankers acceptances," became more expensive by fractional points. When this page sees print, the Federal Reserve Board will doubtless be charging its member banks a higher rate of interest on "discount" advances against the obligations of member banks' customers. The rate has been 3% for some time, but the Board's open discussion of a higher figure is stimulated by rate rises in bank loans and Government-sponsored housing mortgages.



# SPACE enclosed 'archi-structurally' makes this new church stand alone

Rendering shows giant abstract Biblical fish or whale form of church. Chancel, not shown, is at observer's left. Church is 234' long, 54' at its widest, and seats 670.

## *Cathedral-Like Vastness Achieved by Wrapping Space in Pre-Cast Concrete*

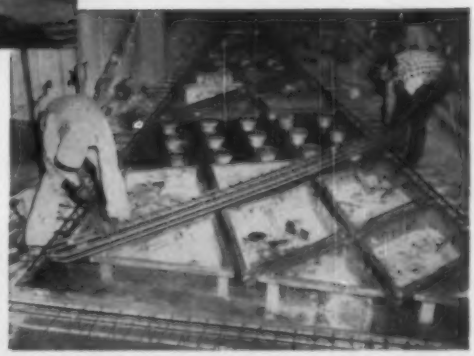
● Construction of the new First Presbyterian Church of Stamford, Conn. in which space is literally wrapped in precast concrete wall and roof elements that are self-supporting, without columns, beams or lintels can perhaps best be described as 'archi-structural' — the shell or frame being both structural and enclosing.

Reinforced concrete wall and roof elements, factory-fabricated to closest tolerances, were trucked to the job site. Panel bottoms were fastened to the footing, slanted panels being supported by false-work until roof panels were lowered into position, making the integrated wall and roof self-supporting. An eight-inch band of concrete connects the panels, resulting in a monolithic structure of great strength and rigidity.

The glass of inch thick amber, emerald and sapphire pieces was made in France from the templates of the triangular sections sent there for that purpose.

Dependable 'Incor'* high early strength, used throughout this job, makes possible assembly-line precision in casting . . . faster form re-use, maximum production with minimum form investment.

*Reg. U.S. Pat. Off.



152 precast elements were used—80 triangles some perforated, others solid, and 72 solid quadrilateral panels—maximum sizes for panels 36 ft. x 10 ft.; for triangles 35 ft. on longest measure—maximum weights. for panels 10 tons; for triangles 5 tons.

Associated Architects
HARRISON & ABRAMOVITZ
New York City
SHERWOOD, MILLS & SMITH
Stamford, Conn

General Contractor:
THE DELUCA CONSTRUCTION COMPANY
Glenbrook, Conn

Precast Sections:
PRECAST BUILDING SECTIONS, INC
New Hyde Park, N. Y.

Consulting Engineer
F. J. SAMUELY
London, England

Structural Engineers
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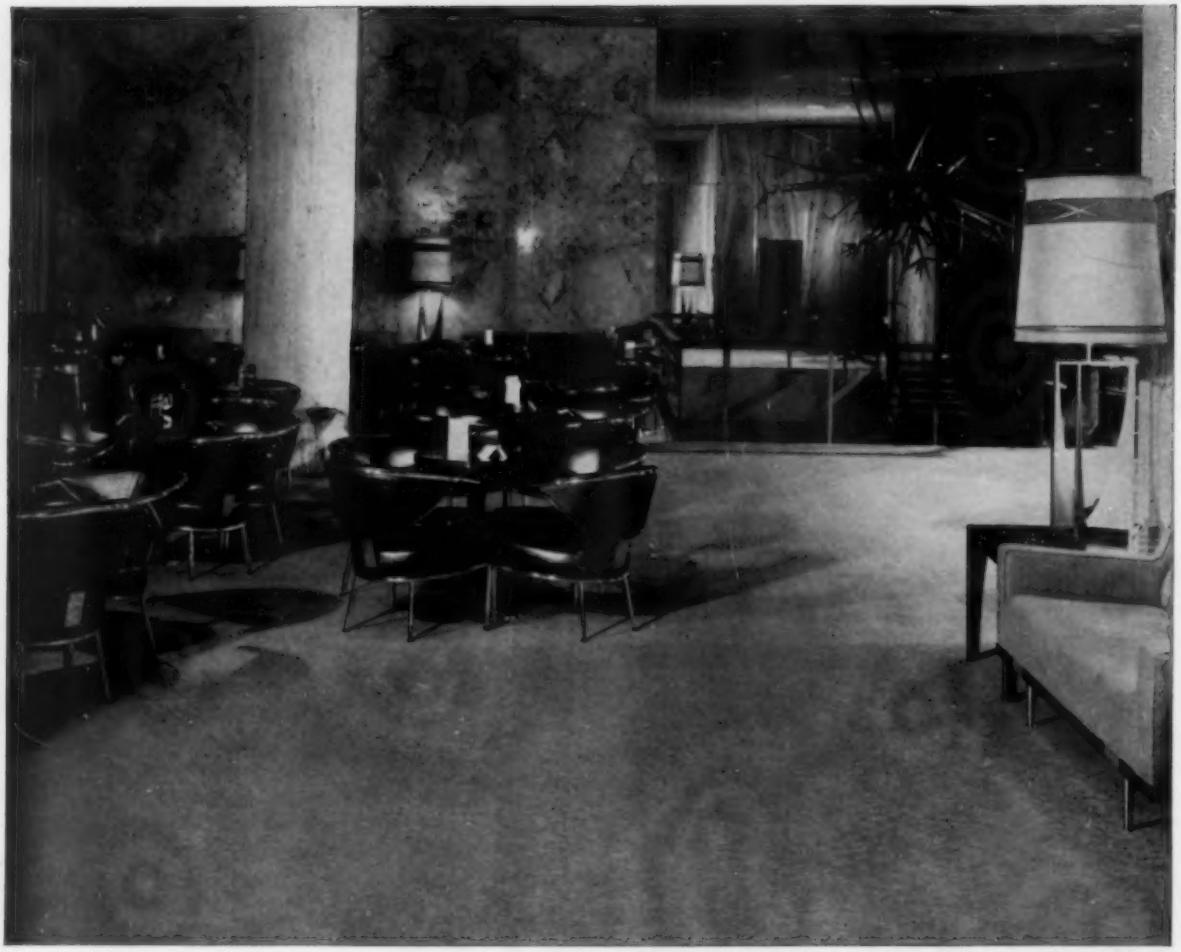

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**CARPET INSTITUTE, INC.,** 350 Fifth Avenue, New York 1, N. Y.

# *preview*

## *for october*

## PROGRESSIVE ARCHITECTURE

### GARDENS FOR THE EAST

Prof. Lewis Clarke of North Carolina State College School of Design suggests in an article that the East cease being influenced by other areas in design for indoor-outdoor living, and set up its own standards. Two fine examples of Eastern Seaboard design for outdoor living are illustrated:

House and Garden, Baltimore, Maryland
James Rose, Architect-Landscape Architect

House and Garden, Long Island, New York
Stanley Salzman and William Breger, Architects
Robert L. Zion, Landscape Architect

Other major presentations in OCTOBER P/A will show the Memorial Hospital at St. Lô, France, by Paul Nelson, with Roger Gilbert, Marcel Mersier, and Charles Sebillotte as Associates; and Richards Department Store in North Miami, Florida, by Gamble, Pownall & Gilroy, with building design and interior design by the Office of Meyer Katzman.

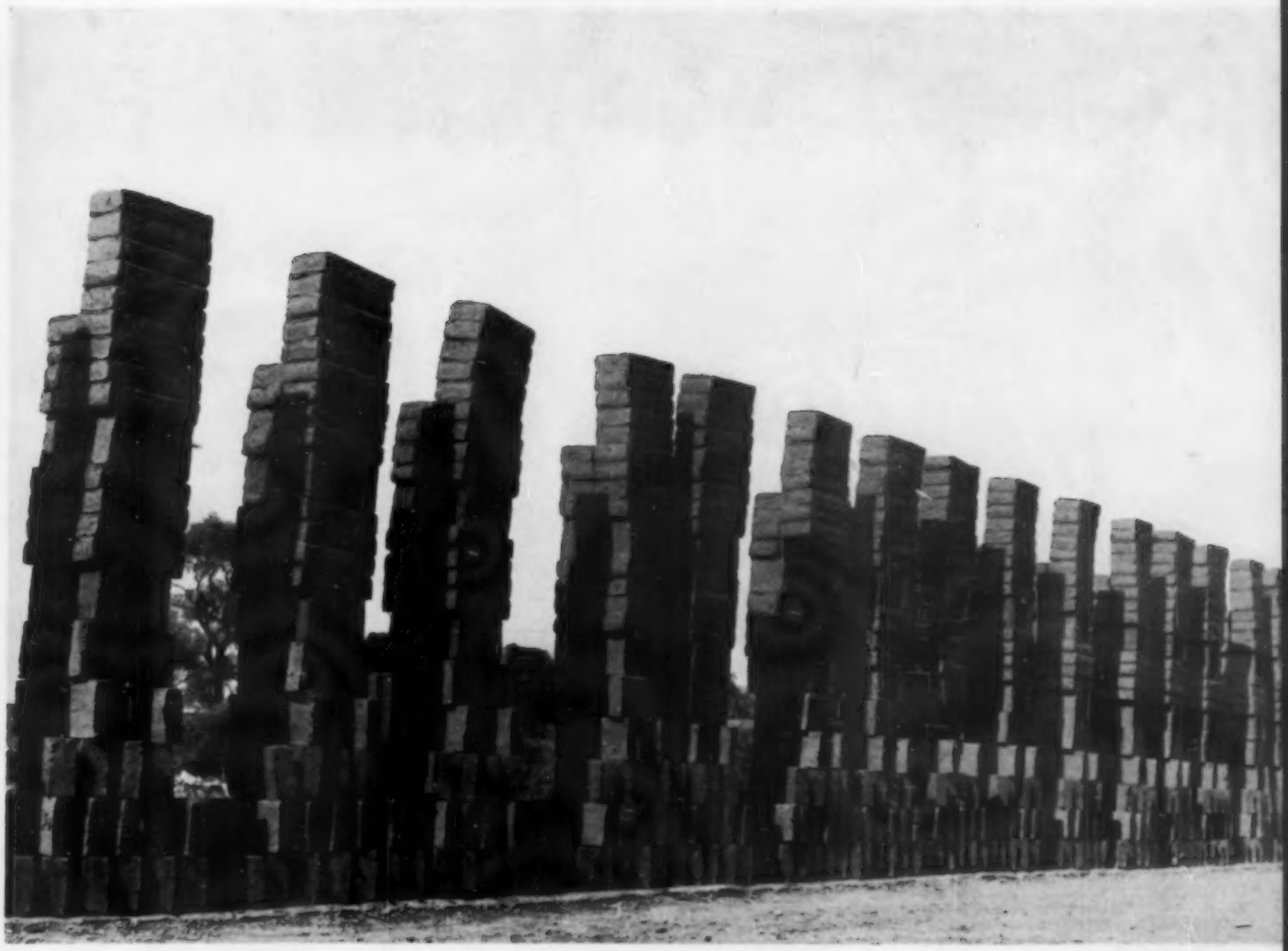
*Progressive Architecture in America:* Reinforced Concrete Construction II, by Ada Louise Huxtable. Mrs. Huxtable will examine the factory by Albert Kahn for Packard Motor Car Company (1905).

*Design Awards Seminar IV.* Fourth in the series of reports on the seminar held by P/A at Tulane University on the winners of the 1957 Design Awards Program will be devoted to the New Orleans Public Library by Curtis & Davis, Architects-Engineers; Goldstein, Parham & Labouisse, Architects; and Favrot, Reed, Mathes & Bergman, Architects.

**PROGRESSIVE ARCHITECTURE**

*means*

**ARCHITECTURAL PROGRESS**



# brickyard architecture

text and illustrations by Marianne Goeritz

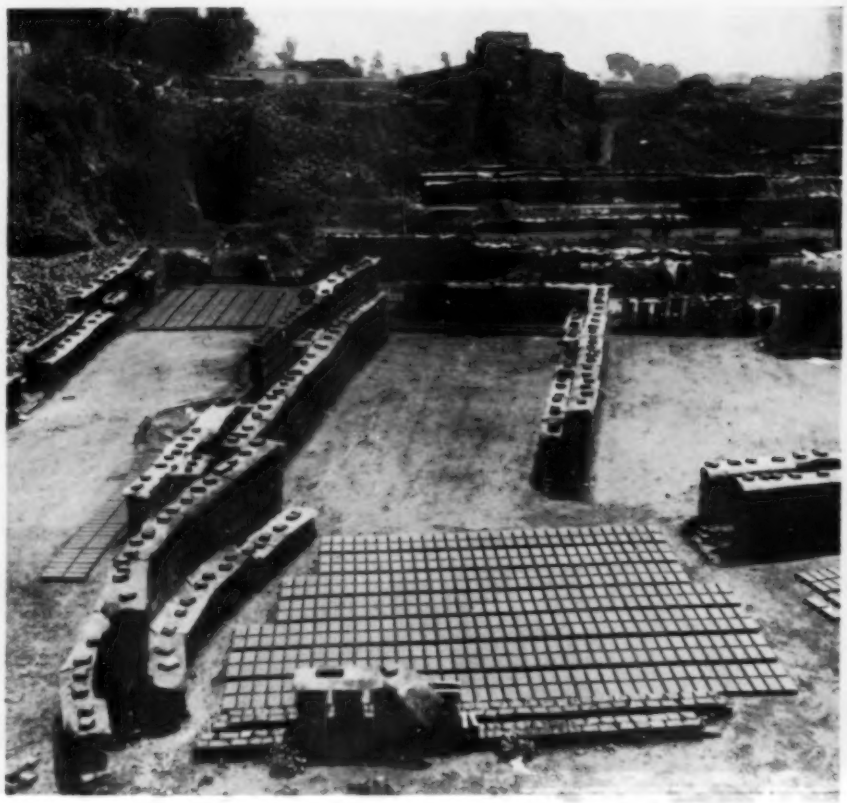
*An astounding sight which few tourist-visitors discover in Mexico, D.F., is the brickyard architecture. Here is a truly anonymous, constantly changing study in pattern and texture and form not previously documented. Marianne Goeritz, writer and photographer, wife of the Sculptor-Architect Mathias Goeritz* (DECEMBER 1956 P/A), *has taken pictures of "this strange world of shapes" over a number of years. P/A is privileged to show them for the first time, with Mrs. Goeritz' own description of the setting.*

On the outskirts of Mexico, D.F., beyond the housing developments and industrial centers, where the fields begin, several centers for making bricks cover large areas in which adequate clay has been found. The Indians who work there live in small adobe homes with corrugated tar-paper roofs, under rather primitive and isolated conditions. Ingenious as they are, they have arranged all they need: sometimes a small garden, some chickens and goats, a narrow watercourse, the water being used for washing clothes

as well as for mixing clay. Forming a nucleus of their own, the inhabitants of these zones have succeeded in establishing an apparently bucolic life.

The earth is clay. When the clay is dug up it is mixed with water and prepared on a flat ground. Bricks are formed by hand in wooden frames, and they stay spread out to get fairly dry. Once dry enough to hold together, they are set up in open layers, forming long walls, where the air and sun can get at them as much as possible to continue the drying process until they are ready for firing. Then they are stacked in fortress-like adobe stoves; the entrance is walled up and the heating begins, mostly by burning garbage and tar.

The fascinating part of this process is the visual impression. Mexico, D.F., is situated on a plain surrounded by a chain of volcanos, and the resemblance of the



*Before firing, bricks are stacked in open rows and left to dry in the sun.*

shape of the brick kilns to the mountains as well as to pre-Colombian constructions and patterns is extremely striking. The Mexican has a deeply rooted feeling for creation of forms. Following an inner tradition, he is able to make out of these brick fields a strange landscape of fire-spitting pyramids, undergoing a constant change through reconstruction, creating thus an almost surrealist effect.

The agglomeration of bricks set up in so many different ways seems to be almost a modern sculpture-architecture, and sometimes the entire view of these areas gives the impression of an emotional sort of city-planning. The background of kilns recalls a relationship to pre-Colombian buildings, or even to the mastabas of the pre-Christian era.

Everything looks gray; even the people seem to be gray, so much are they absorbed by their surroundings. Only occa-

sionally, like vermilion-colored buildings, the already-baked but not yet delivered bricks interrupt the grayness of the landscape. The heavy smoke bulging out at the top of the kilns adds something extremely dramatic to the entire region.

Although there is much uniformity in color, the way of setting up the bricks varies, as every one of these working men has developed an imagination which recalls most vividly Aztecan, Mayan, or Zacatecan sources. Whether due to originality, or heredity, in any case the result is astounding, beautiful, and very architectural.

With the growth of Mexico and especially with the planning of the new "Satellite City" outside the capital, itself, the brick people of this most important brick region will some day have to leave their fields and settle down a few miles, or even many miles, farther away, where other layers of clay will make it possible to continue the same task.

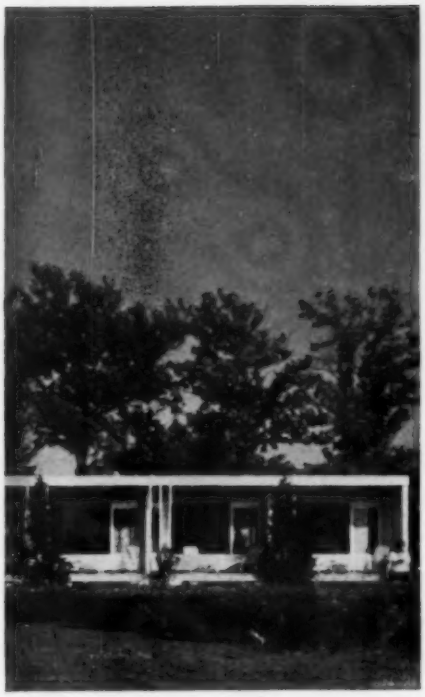
*Sun-dried bricks are fired in kilns* (across-page), *then stored* (below) *for shipment to building sites. Typical brickmaker's adobe hut* (left).

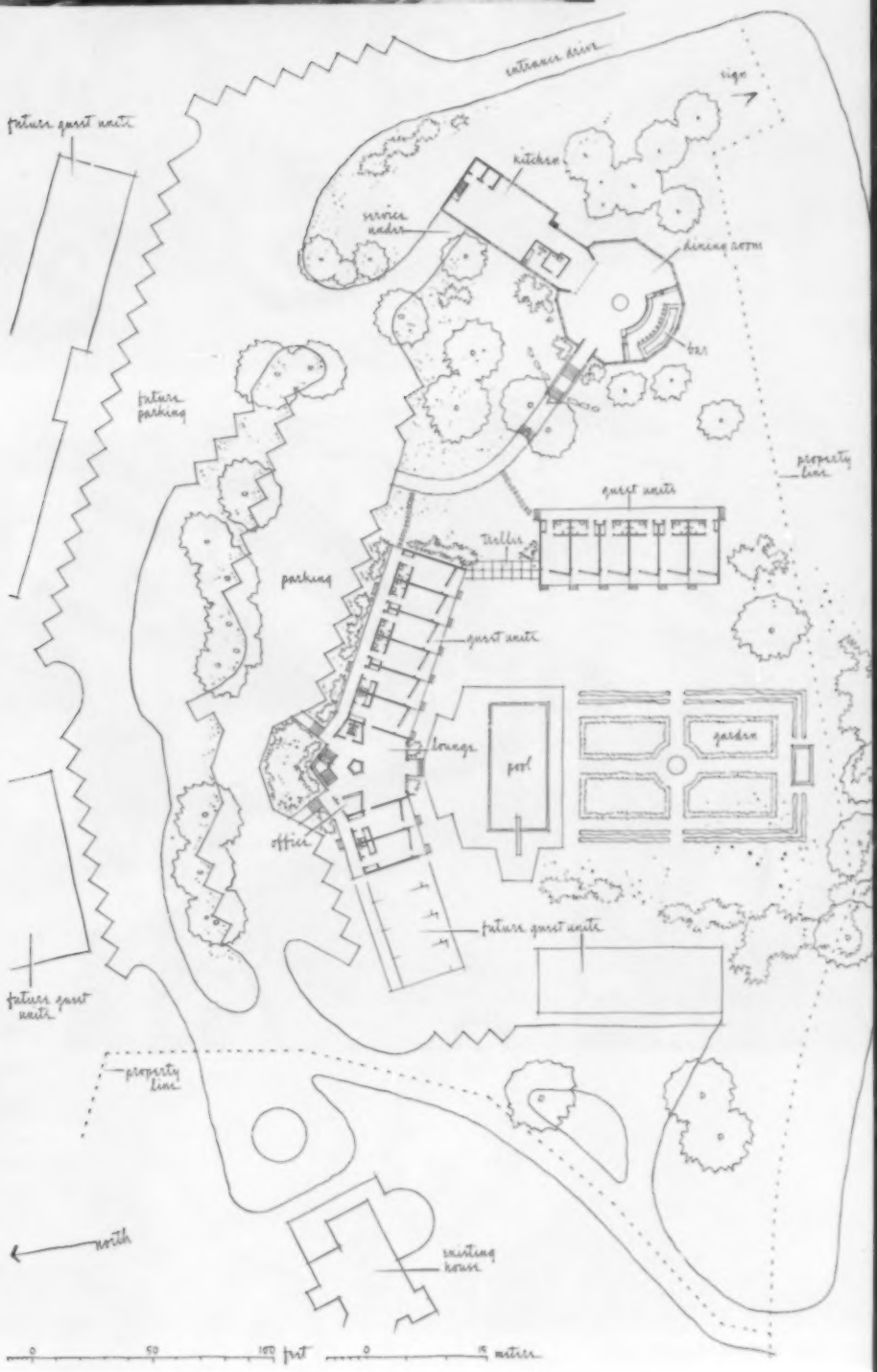
# motor inn and club dome

| | |
|---|---|
| location | Woods Hole, Massachusetts |
| architect | E. Gunnar Peterson |
| associate on dome structure | R. Buckminster Fuller |

Located on an eminence at the southwestern tip of Cape Cod, with views over Vineyard Sound and Buzzards Bay, the Nautilus Motor Inn was not only designed by Architect Peterson but also is his own business venture. To serve the general public, as well as the motor-inn guests, Peterson commissioned "Bucky" Fuller to engineer the conversation piece—a 54-ft-diameter, plastic-surfaced, geodesic Club Dome that is the restaurant portion of the project. The dome is composed of a series of wood, hyperbolic, diamond frames (JUNE 1954 P/A).

Important ingredients in the design and



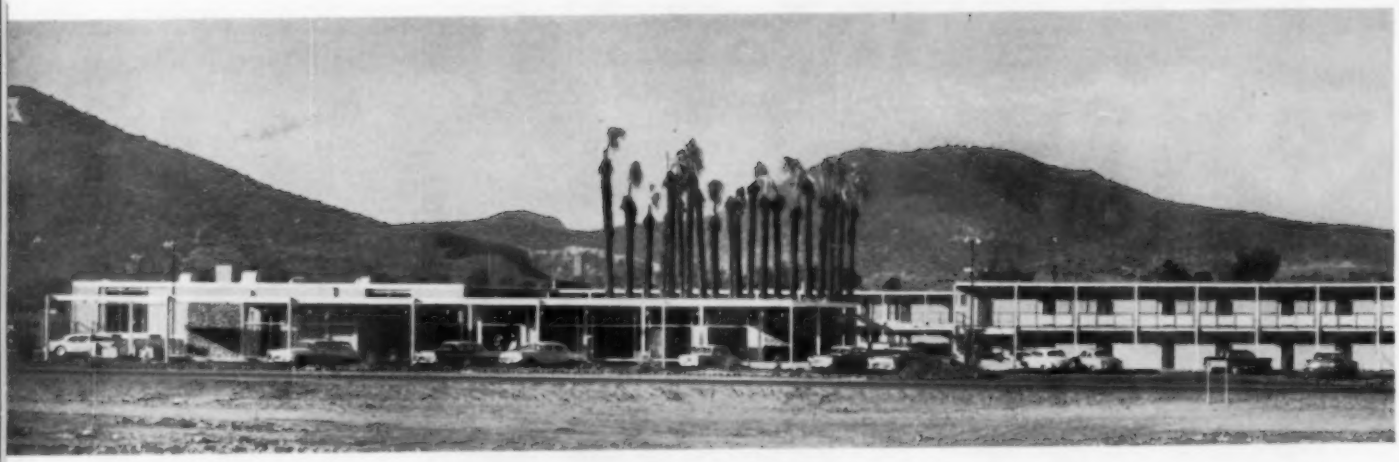



construction of the guest-room wings were economy (a single material frequently doing two jobs) and a simple, unadorned expression that is a traditional regional characteristic. In the wood frame, floor and ceiling timbers are spaced 4 ft on centers, and structural-insulating decking (wood-fiber-cement) constitutes the subflooring and roofing. Much of the exterior wall is of cement-surfaced insulation board; interior wall surfaces are hard, gypsum-based wallboard or (in baths) ceramic tile. Floors are carpeted. Seasonal heating is provided by electric, radiant panels.

*In the center of the main guest-room block is the office and guest lounge; future construction will add second-story wings similar to those on the ground floor.* Photos: Louis Reens

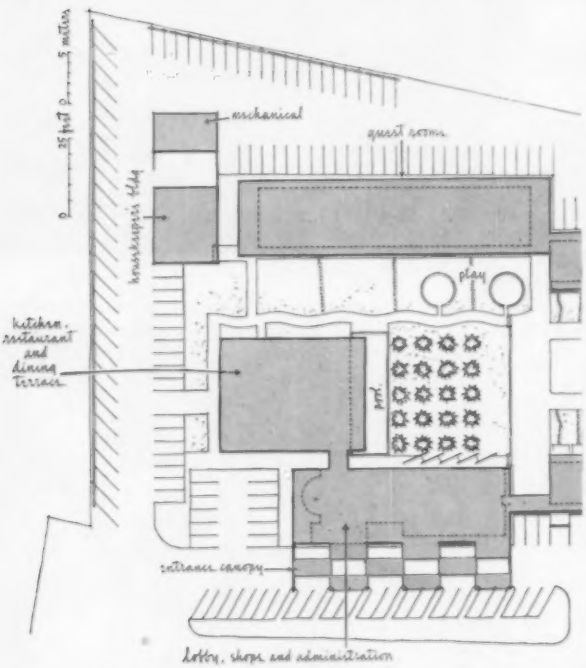
*A huge window in the lounge looks across gardens to the town of Woods Hole and Vineyard Sound beyond. Here, as elsewhere, fixed plate-glass areas are supplemented by glass jalousies.*

*A step-down arrangement in the Club Dome gives both diners and bar visitors an uninterrupted view through clear-plastic areas; even where the surfacing is of colored, translucent-plastic sheeting, shadows of trees form an ever-changing pattern. Diamond shape of the hyperbolic wood frames is evident* (right) ; *wood members are either 1"x3" or 1"x8".*



# desert motel

| | |
|---|---|
| location | Tucson, Arizona |
| architects-engineers | Hausner & Macsai |
| associated architect | Bernard Friedman |

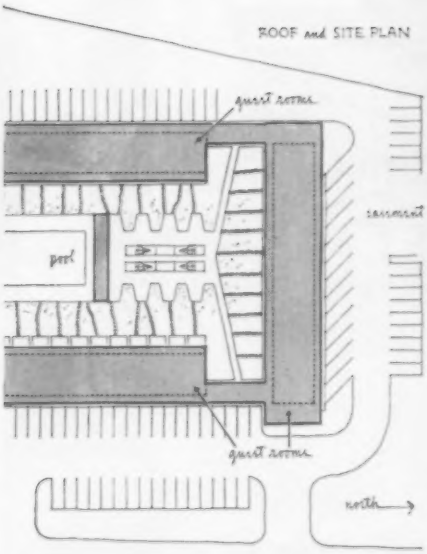


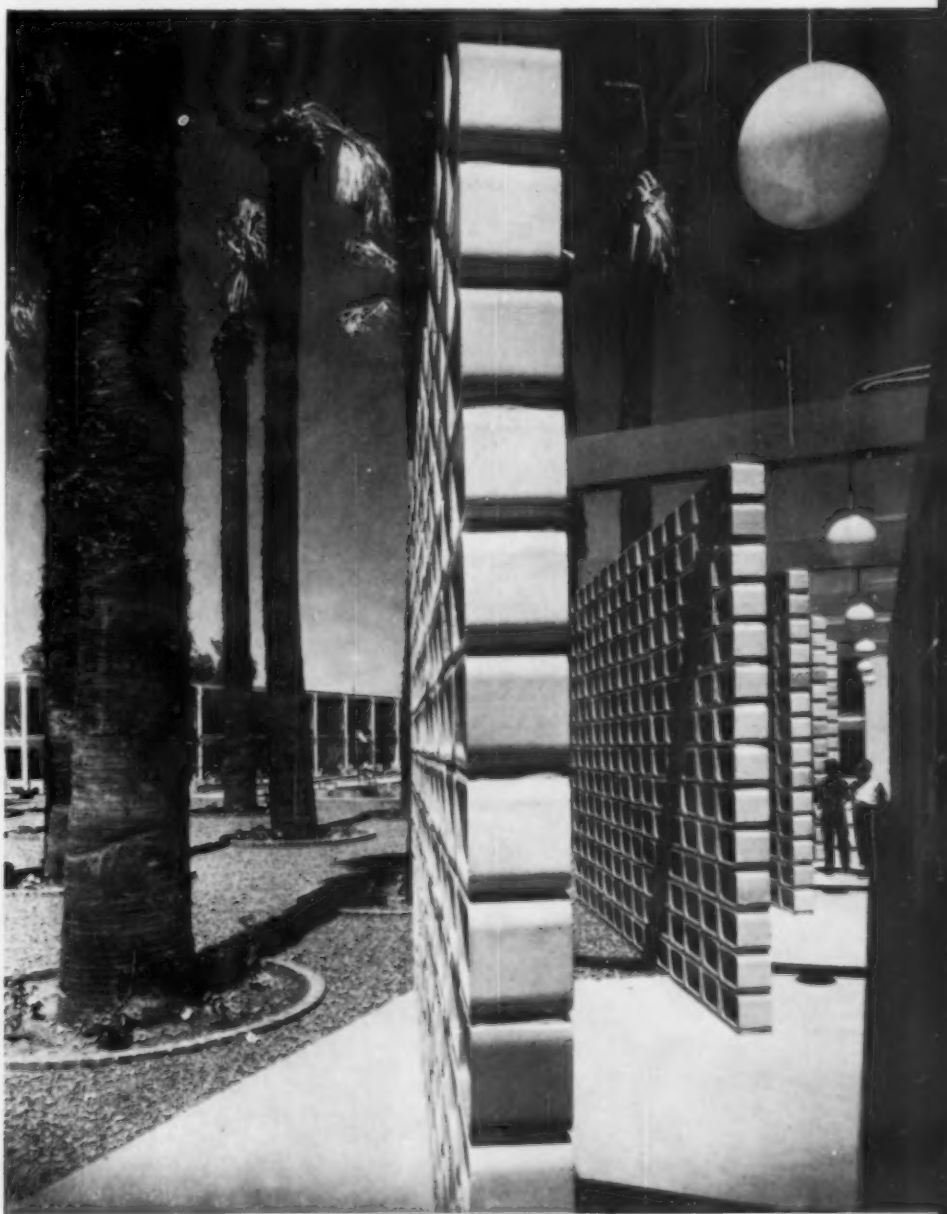

This motor hotel was planned with the conviction that a colorful, well illuminated building is worth more than any sign! "Bright colors were picked in contrast to the sandy, rather colorless desert," according to the architects, "and the oasis feeling was further helped by the 'symbolic' palm trees." The motel is made up of seven building components—four guest wings, a food-service building, administration and shop building, mechanical-equipment unit, and housekeeping building—all arranged to give form to a quiet garden court. Most of the 122 rooms and their individual loggias or porches (second floor) open onto this court, which contains a swimming pool, reflecting pool, playgrounds, and palm garden. Traffic from automobiles and electric service carts is restricted to a peripheral driveway. Entry-dressing areas and baths serve as buffers against noise from the drive and parking areas. Construction of the administration and restaurant building is of steel "for clear, architectural appearance," the architects explain. "For the hotel buildings, concrete-block bearing walls and joist floors were used for economy. The balcony lines and the columns gave the desired clarity." For transparent shielding and sun-screening the architects specified stacked flue tiles. William Goodman was Consulting Engineer; Murray J. Shiff Construction Company, General Contractor.

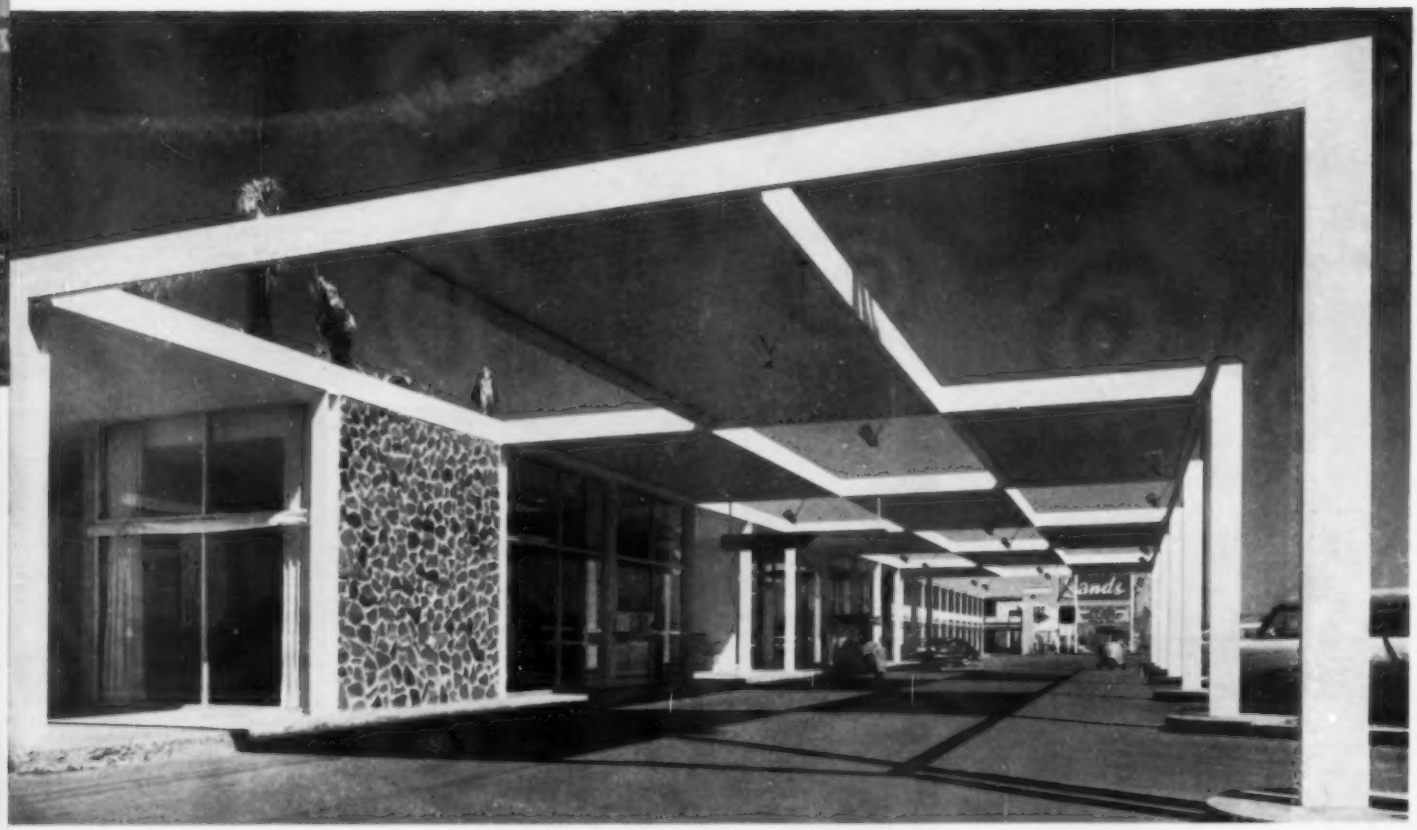
*Photos (except as noted): Julius Shulman*

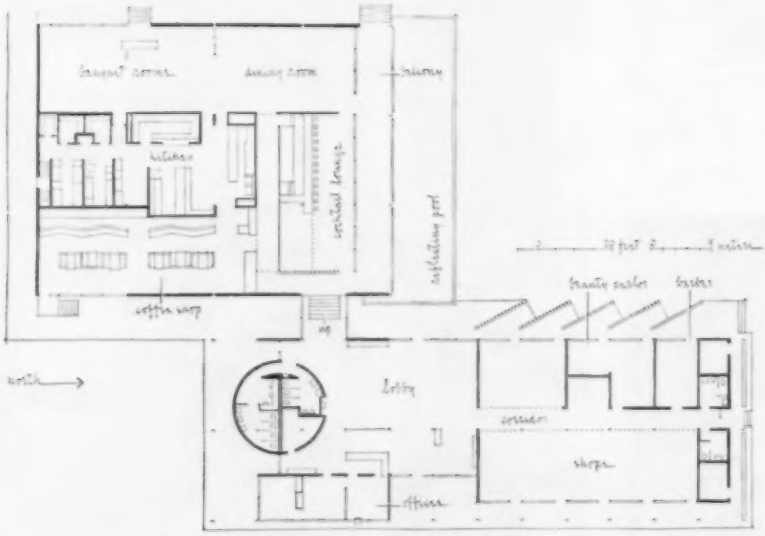
Frank L. Gaynor

*The motor-hotel is located on the freeway of Tucson, four blocks from the downtown area, and within a short drive of the local airport. Fronting on the highway are offices, shops, and one of the guest wings* (below left). *Toward interior court* (below) *shop windows are screened by a series of flue-tile walls.*

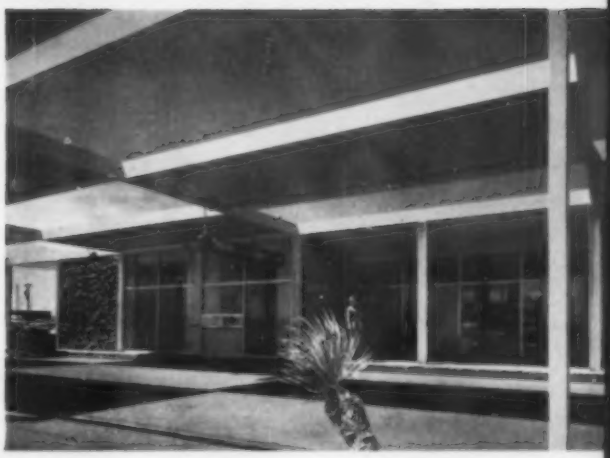


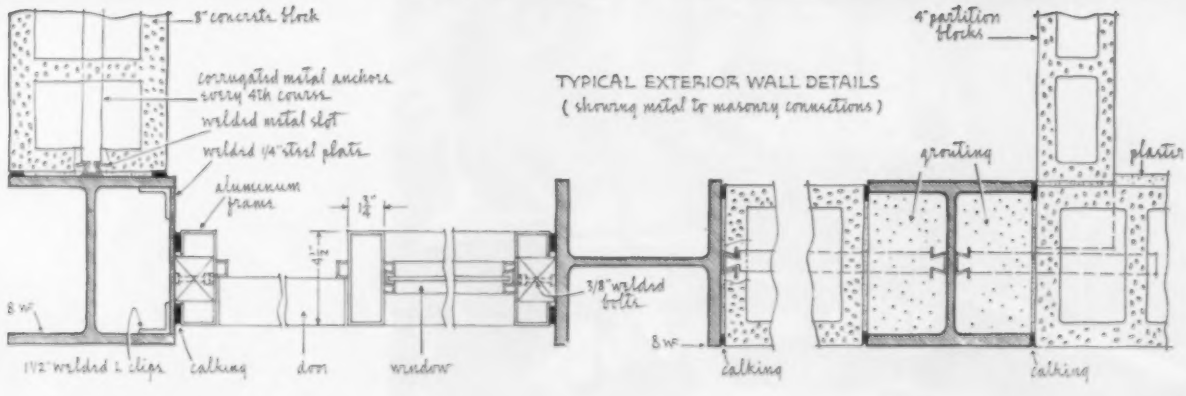



*Administration and restaurant areas are heated and cooled by a central system. Ceilings in these public areas are surfaced with acoustical tile; floors with terrazzo; carpets define the seating areas.*



*Travelers enter by car under the canopy of the administration building; a buzzer alerts the hotel clerk and registration may be made at the "drive-in window." The same clerk also serves the main desk in the lobby* (above). *Waiting areas are pleasantly grouped about a fireplace and near a window wall, oriented toward the reflecting pool* (below).

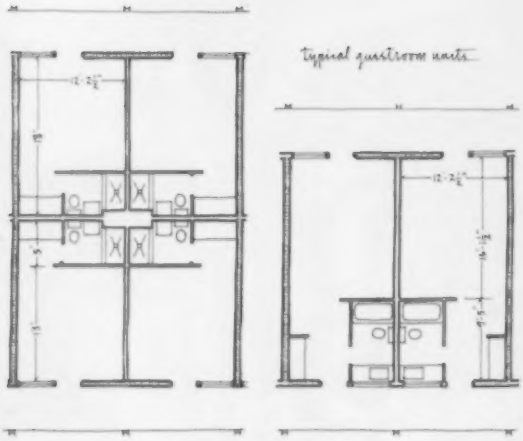



TYPICAL EXTERIOR WALL DETAILS
( showing metal to masonry connections )

*Restaurants—a coffee shop* (above), *cocktail lounge* (top), *main dining room* (below), *and banquet rooms—were elevated a half-story for better views.*

*Dining terrace* (right *and* acrosspage top) *overlooks reflecting pool and 400-ft depth of garden court.*

***desert motel***



*Rooms, with the exception of the commercial units, have individual loggias or porches and face on the garden court. Entry-dressing halls and baths serve as noise buffers toward the parking area. All have individual heating and cooling units, in furred ceilings of entry halls.*

## high-rise hotel

| | |
|---|---|
| location | Philadelphia, Pennsylvania |
| architects | Perry, Shaw, Hepburn & Dean |
| partner-in-charge | Robert C. Dean |
| project manager | Stanley S. Setchell |
| Sheraton staff architect | Mary Morrison Kennedy |

Among business buildings, the hotel is practically unique in that the *building itself* (plus its services) is the merchandise that must be sold day after day, year after year. The Philadelphia Sheraton Hotel—the first brand-new hotel that the Sheraton Corporation of America has undertaken, to date—is also unique in a number of other ways. The site is long (400′) and narrow (100′); it is situated above the tracks of the Pennsylvania Railroad leading to the adjoining Suburban 18th Street Station. Back in 1929, there were plans to build a 30-story office building above the tracks, and columns (spaced to meet the needs of railroad tracks) and street-level floor slab were installed. Therefore, design of the hotel had to be worked out within these given conditions; and, of course, no sub-basement was possible. Furthermore, the narrowness of the site forced a vertical organization of public spaces, resulting (in effect) in a three-story lobby grouping; a scheme "that more nearly resembles that of an ocean liner than the conventional hotel." In actuality, this seeming limitation has worked out advantageously, with persons attending banquets or other functions (served by escalators to the second- and third-floor public areas) accommodated quite separately from the hotel guests, who use elevators off the main lobby. Mechanical services that would normally occur in a sub-basement are here rele-

*The main lobby* (right) *has a terrazzo floor with aluminum screeds; marble or glass mosaic veneer on walls and columns; and acoustical ceiling; the desk is black marble supported on stainless steel.*

*An 800-car parking garage* (below), *part of the Transportation Center designed by Architect Vincent G. Kling, is just across the street and reached underground from the hotel. The garage is rented and managed by Sheraton.*

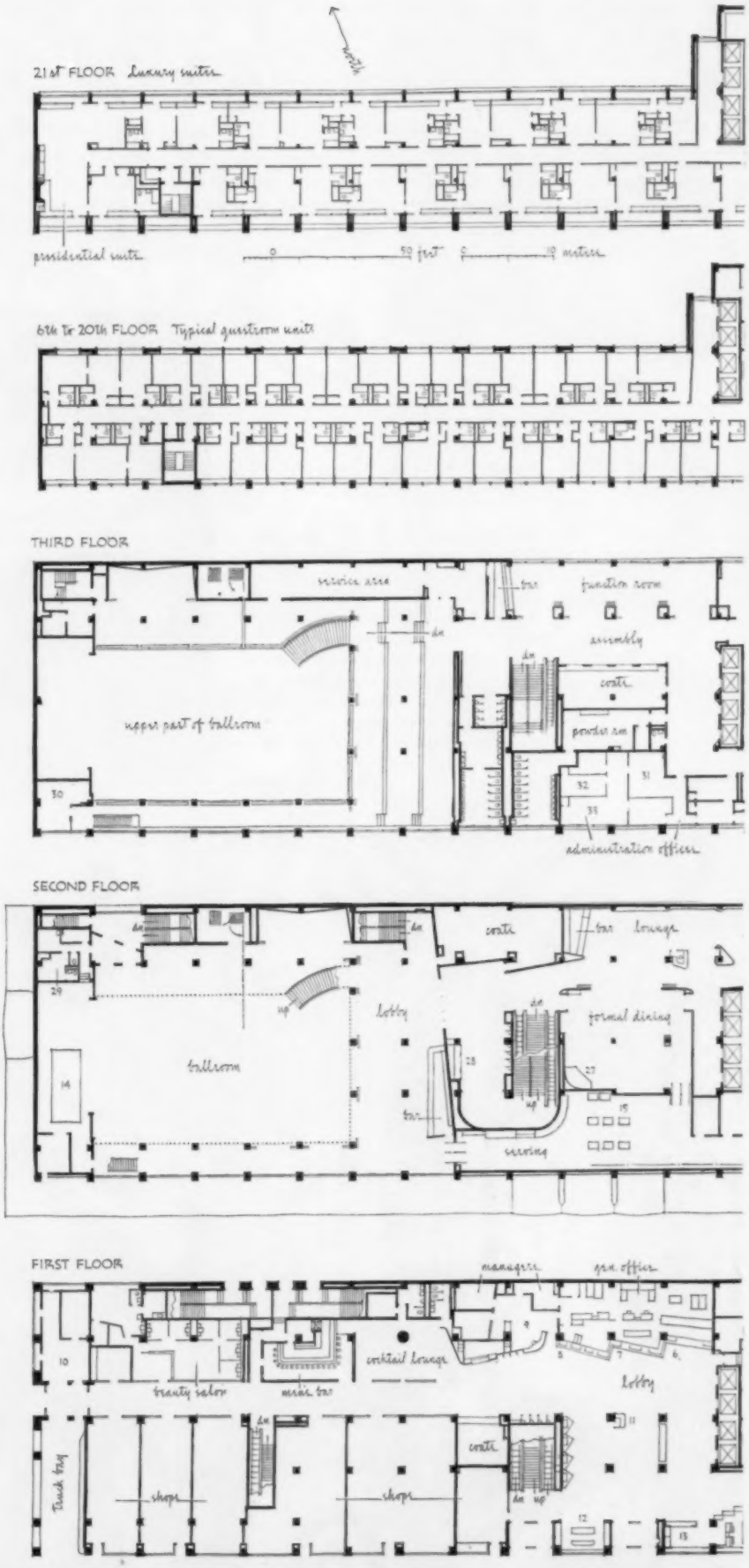
Photos: Ezra Stoller

gated to the fourth level above grade. Guest rooms occur in the remaining 17 floors, with the top floor given over to luxury suites with private balconies. The site, incidentally, is immediately across Pennsylvania Boulevard from Philadelphia's impressive Penn Center development; so the hotel is an integral part of this vast redevelopment.

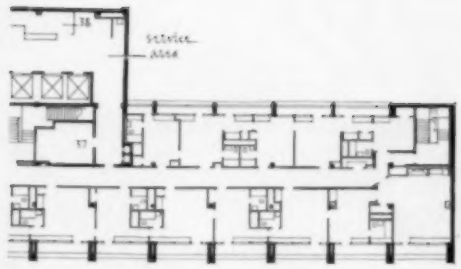
Rooms that serve both the hotel guests and the general public in this 21-story, 900-room, air-conditioned hotel include a two-story-high, 12,000-sq-ft ballroom (on second and third levels), plus 20 percent additional area in the room's balconies, and movable partitions that allow maximum flexibility; 8 functions rooms, to serve from 25 to 300 persons seated at tables; 3 cocktail lounges and a men's bar; a medium-priced restaurant to accommodate 200; a small, formal dining room for 100; and, at street level, a chop house and counter-type restaurant opening off the street.

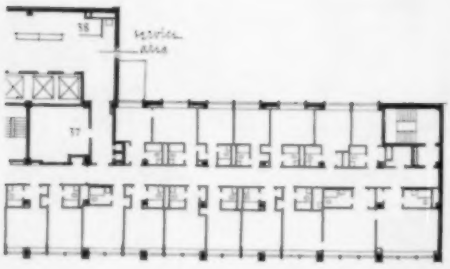
Another exceptional aspect of the hotel is inclusion of many related fields of design—exterior ceramic-on-steel panels by Gyorgy Kepes; a glass-mosaic wall mural on the second floor by Kepes and Robert Preusser; lobby carpets and murals on the third floor by Anton Refregier; murals by Lumen Martin Winter and Francis Scott Bradford; carvings in three of the public rooms by Sally Swann Carr; and a full-height metal screen and chandeliers in the ballroom by John Rhoden.

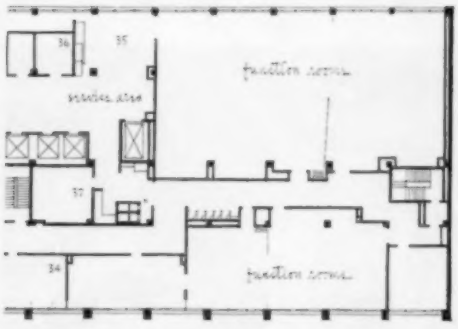
Maurice A. Reidy was Structural Engineer; Slocum & Fuller, Mechanical Engineers; Bolt, Beranek & Newman, Acoustical Engineers; and McCloskey & Company, General Contractor.

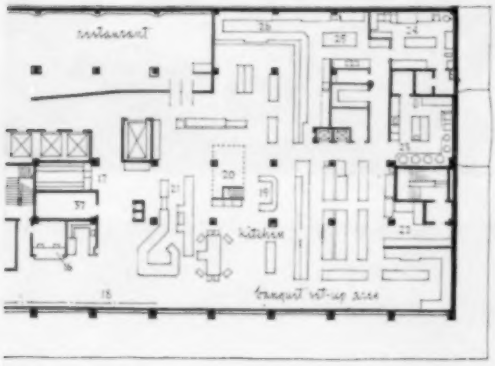


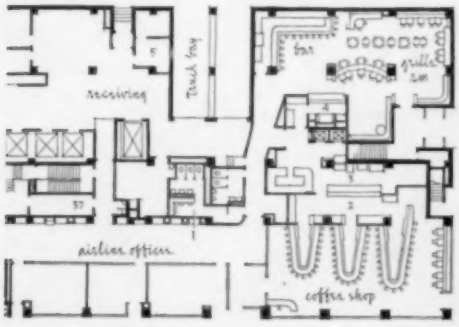

*Existing column spacing in the long dimension was 18'-8½". As the architects point out, 12' is a good column spacing for a hotel; therefore, each pair of bays of the existing columns was utilized to form three guest-room units. "The handling of a column in the middle of every third bedroom offered a special problem."*




1 powder room
2 serving area
3 kitchen
4 grills
5 timekeeper
6 mail and information
7 registration
8 cashier
9 waiting area
10 service area
11 bell captain
12 flower shop
13 news stand
14 floor hatchway
15 waiters' lines
16 room service office
17 service bar
18 Tray Truck parking
19 checkers' booth
20 chefs' office over
21 dishwashing
22 scullery
23 vegetable preparation
24 pastry shop
25 salad preparation
26 pantry
27 music
28 coversation desk
29 dressing rooms
30 TV-radio
31 waiting room
32 maitre D'
33 sales office
34 general manager
35 banquet pantry
36 refrigerators
37 mechanical core
38 linen-mattress storage

## Materials and Methods

### construction

**Foundation:** steel grillages on rock foundation. **Structure:** structural-steel frame, open-web expanded-type shortspan joists, reinforced-concrete floor slabs and roof—Bethlehem Steel Company. **Surfacing:** walls: exterior: porcelain enamel panels—Battinger Corporation; aluminum window wall—J. S. Thorn Company; window wall panels—Kaiser Metal Products; limestone veneer; interior: plaster—U. S. Gypsum Company; rest rooms, toilets: glazed tile—U.S. Ceramic Tile Company, American-Olean Tile Company; bathroom: structural glass—Pittsburgh Plate Glass Company; floors: carpets; quarry tile; ceramic tile; ceiling: acoustical plaster—U.S. Gypsum Company; acoustical tile—Elof Hansson Company; perforated asbestos boards with sound-absorbing pads in kitchen—Keasby & Mattison Company; roof: tar and gravel—Barrett Div., Allied Chemical & Dye Corporation. **Dampproofing:** spray coat—Lewis Asphalt Engineering Corporation. **Insulation:** thermal: insulation on roof—Celotex Corporation; glass-fiber on exterior walls—Owens-Corning Fiberglas Corporation. **Roof Drainage:** drains—Josam Manufacturing Company. **Partitions:** interior: gypsum board—U.S. Gypsum Company; cinder block; toilet: metal—Milwaukee Stamping Company. **Windows:** glass, aluminum store fronts—Pittsburgh Plate Glass Company. **Doors:** interior: sliding—John T. Fairhurst Company; accordion-type; flush wood; flush hollow metal; baked-enamel and stainless-steel elevator doors—Dahlstrom Metallic Door Company; tempered-glass and aluminum-frame entrance door—Pittsburgh Plate Glass Company. **Hardware:** lock sets, door closers, panic exit—Russell & Erwin Div., American Hardware Corporation; hinges—The Stanley Works.

### equipment

**Specialized equipment:** stainless-steel kitchens—Universal Products Corporation; kitchenette units—Dwyer Products Corporation; public address system—Radio Corporation of America; pneumatic tubes—Lamson Corporation; maid's call system, electronic mail-message call system—Auth Electric Company, Inc. **Elevators:** four passenger, three service, one freight: hoisting equipment—Haughton Elevator Company; moving stairways—Peele Motor Stairs. **Lighting Fixtures:** Century Lighting, Inc., Lightolier, Inc., Skylike Lighting Company; Litecraft, Manufacturing Company; Day-Brite Lighting Inc., McPhilben Company; Appleton Electric Company; Gotham Lighting Corporation; Swivelier Company, Inc.; Edwin F. Guth Company. **Electric Distribution:** panelboards, multibreaker—General Electric Company; light switches—Minneapolis-Honeywell Regulator Company. **Plumbing & Sanitary:** water closets, tubs, lavatories—Crane Company; toilet seats—American Radiator & Standard Sanitary Corporation; water heater—Patterson-Kelley Company, Inc.; shower controls—Symmons Manufacturing Company; flush valves—Sloan Valve Company; accessories—Hall-Mack Company; stainless-steel medicine cabinets—Fenco Corporation. **Heating:** perimeter type with finned-tube convectors—Sarcotherm Controls, Inc.; fan coil units—American Standard & Radiator Sanitary Corporation; unit heaters—American Blower Corporation; ventilators—Penn Ventilator Corporation; controls—Minneapolis-Honeywell Regulator Corporation. **Air Conditioning:** cooling tower—The Marley Company, Inc.; air diffusers—Anemostat Corporation of America; condenser, compressor, cooling coils, ventilators—American Blower Corporation; controls—Minneapolis-Honeywell Regu'ator Corporation.

*The three-story arrangement of public rooms is clearly demonstrated on these two pages. Escalators transport people from a separate lobby-level entrance to the two upper floors —the bar on the second floor* (above) *with the Kepes-Preusser glass-mosaic mural; the sub-dividable Delaware Valley Suite* (top), *on the third floor, with murals by Anton Refregier.*

*A sit-up-counter coffee shop,* (bottom) *occupies a prominent corner of the street floor; the grand ballroom* (below), *with its ample balconies occupies both second- and third-floor levels; the medium-priced Town Room restaurant* (left), *with murals by Lumen Winter, occurs at the second-floor level.*

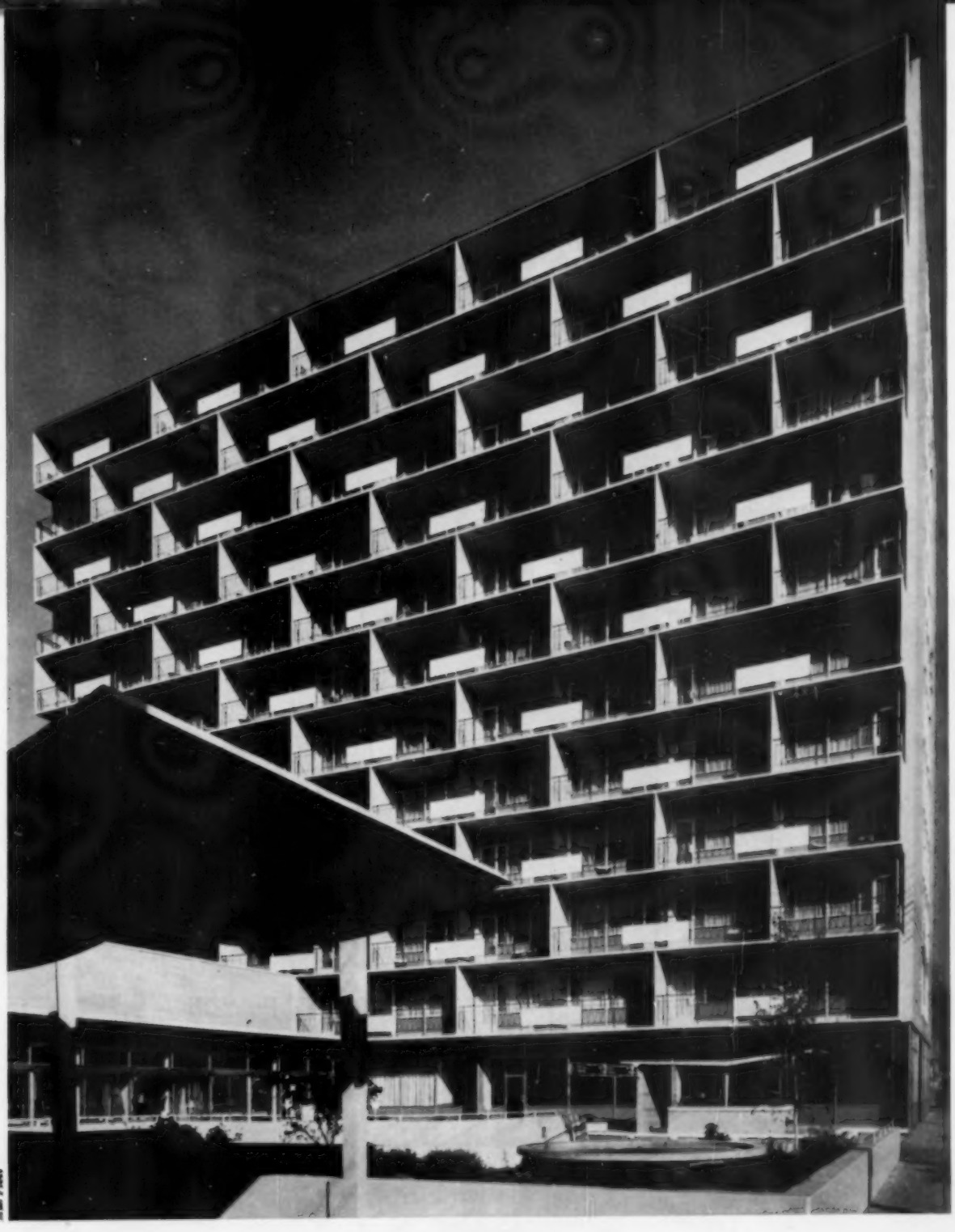
*A dramatic brazed-iron screen by John Rhoden* (across-page) *borders the grand staircase joining the second- and third-floor levels of the ballroom. Many prefer to enter the room from the upper level.*

*The typical guestroom-floor elevator lobby* (above) *is wall-to-wall carpeted.*

*On the top floor are luxury rooms and suites, with private exterior balconies adjoining.*

*high-rise hotel*

*The entire hotel is air conditioned, with individual controls in each room. Wall-to-wall carpeting, a television set, and a rocking chair are standard equipment in all rooms. The bathroom unit has a useful extension beside the basin; shower tubs have sliding glass-panel enclosures.*



Max Flint

Panda Photography

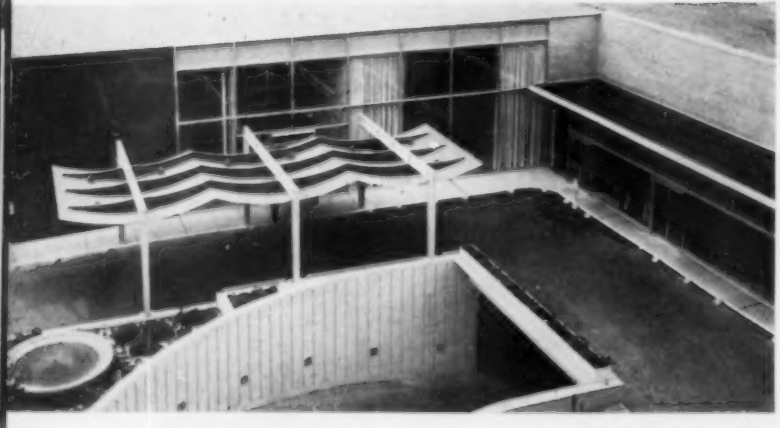
## hotel additions

| | |
|---|---|
| location | Toronto, Canada |
| architects | Page & Steele |
| partner-in-charge-of-design | Peter Dickinson |

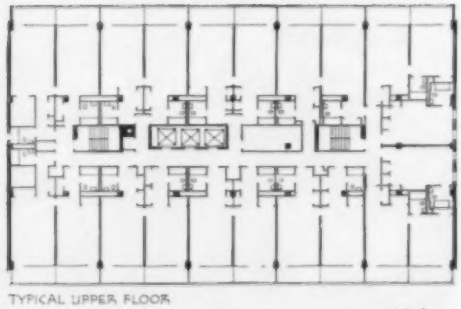
*New lobby* (acrosspage bottom) *opens onto entrance court with its gay canopy, fountain, flower boxes, and sweeping ramp, and toward the colorful south façade of the new guest wing* (right).

*B. Shawcroft*

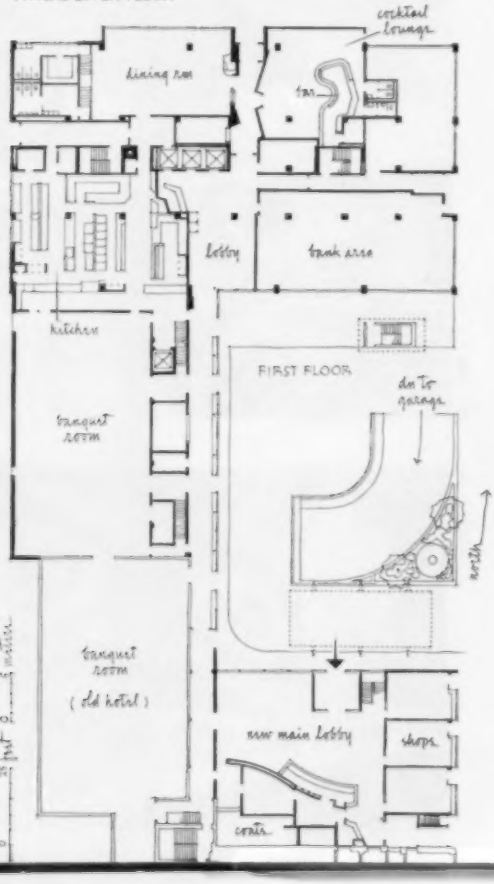
*Max Flores*



*Collingwood*



TYPICAL UPPER FLOOR



With the acquisition of property to the north of the existing Park Plaza Hotel, it was possible to augment and improve its services by: (1) a new 12-story wing to accommodate 250 rooms with private baths and balconies; (2) new reception and banquet facilities serving both the old and new building portions; (3) an underground garage for 150 cars. A further improvement—the result of careful site-planning—is the automobile court where taxis and cars may receive and discharge passengers away from traffic. On its ground floor, the new hotel tower contains kitchen, dining room, cocktail lounge, and rental space; three large reception rooms, staff rooms, and guest suites on the second floor; and typical hotel suites on the ten floors above. The new banquet and reception facilities have been placed in a structure linking the old with the new wing. Construction of the new hotel tower is of reinforced concrete, using rib-slab floors. "The system proved to be fast, practical, and economical," write the architects, "and provided clear spans of 27'-0" in some areas." End walls are surfaced with glazed brick; spandrels are of wired glass with painted asbestos back-up; balcony partitions alternately of precast concrete or wired glass set in steel frames; windows standard steel sash. "The turquoise-colored glass panels against the pink brick," continue the architects, "are very lively and effective. This is again contrasted with the white structural frame, overhangs, and balcony panels." The block containing new banquet and reception facilities is framed in steel, using concrete floors. Hooper & Yolles were Structural Engineers; J. A. Norton, Mechanical Engineer; Yolles & Rotenberg, General Contractor.

*Max Fleet*

Collingwood

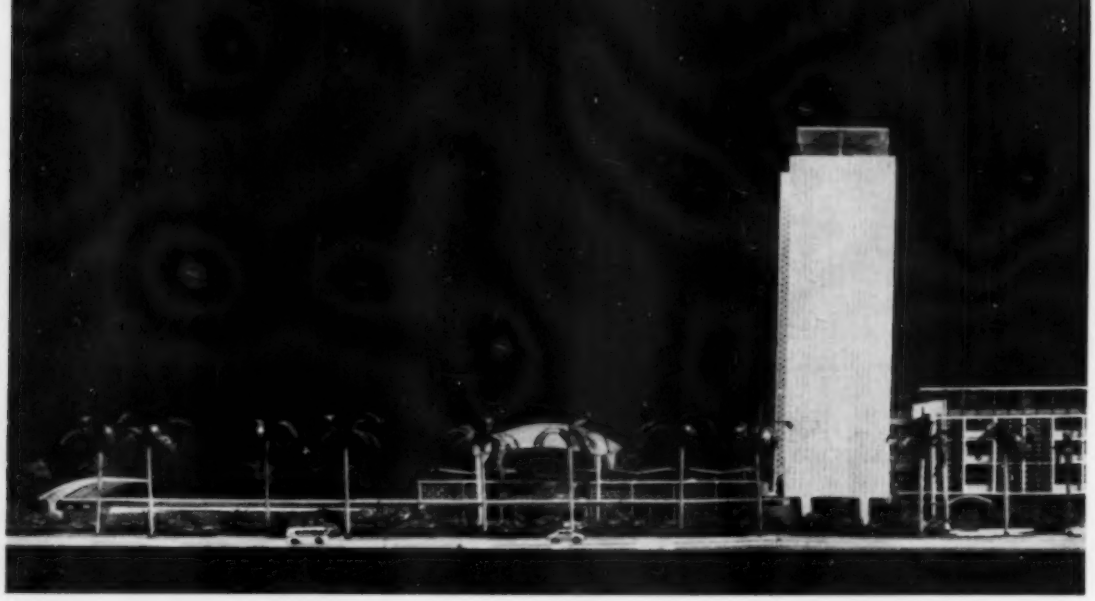
*New lobby* (above) *adjoins to the north of existing hotel. A mezzanine accommodates the hotel offices and switchboard. The new banquet hall* (acrosspage bottom) *is located between the new kitchen and existing "Plaza" room.*

Panda Photography

B. Shawcraft

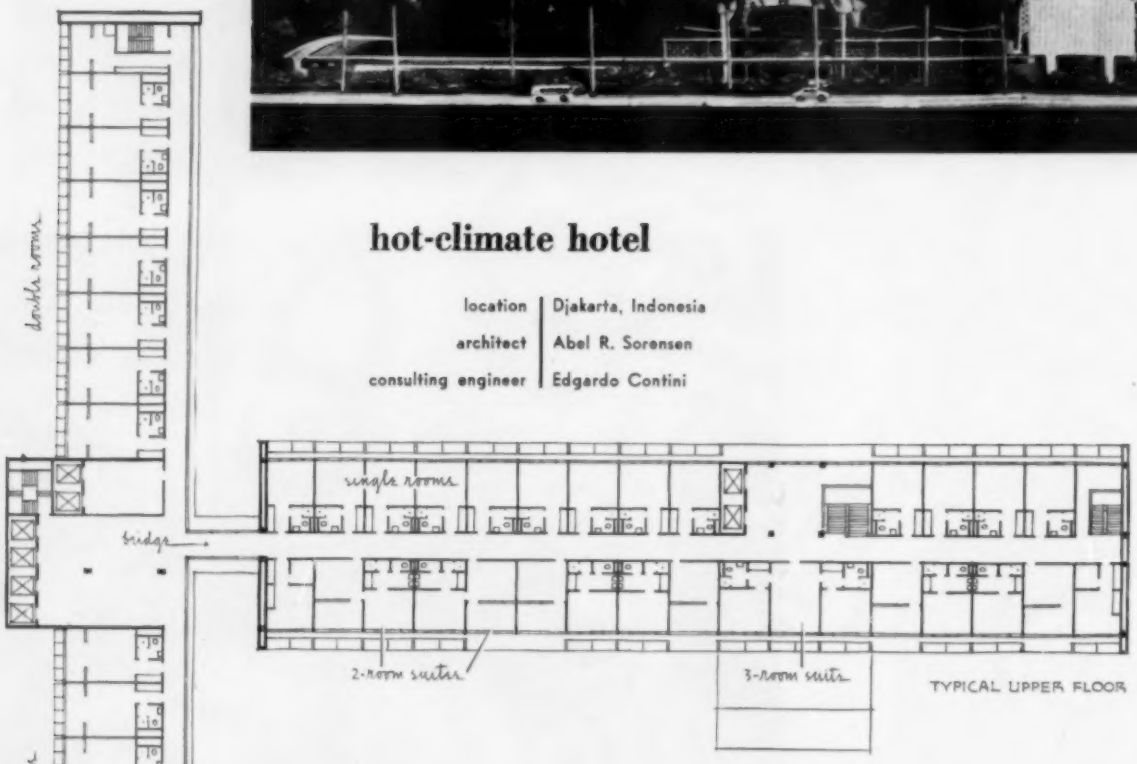
*Since the hotel is partly residential, balconies were provided for all suites in the new wing. These room extensions help also to avoid the closed-in atmosphere of the usual hotel room.*

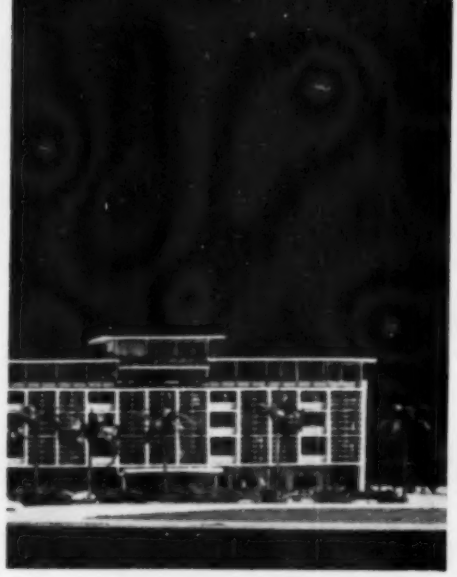
Panda Photography



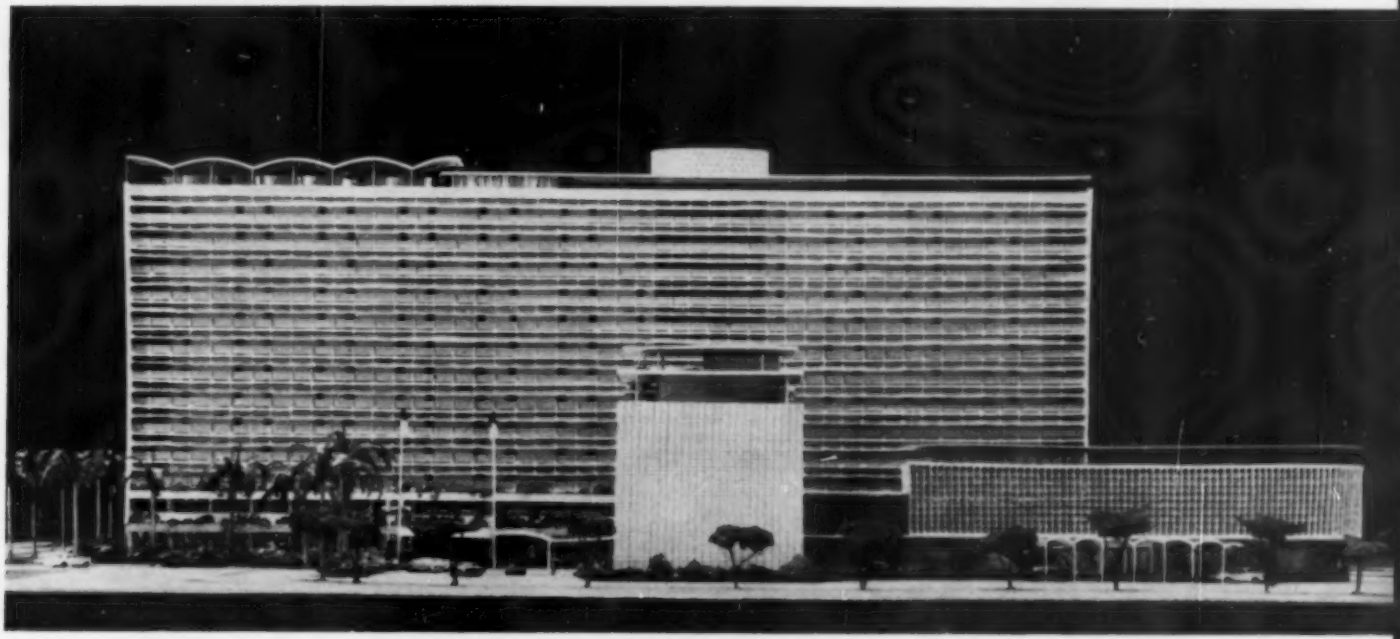
# hot-climate hotel

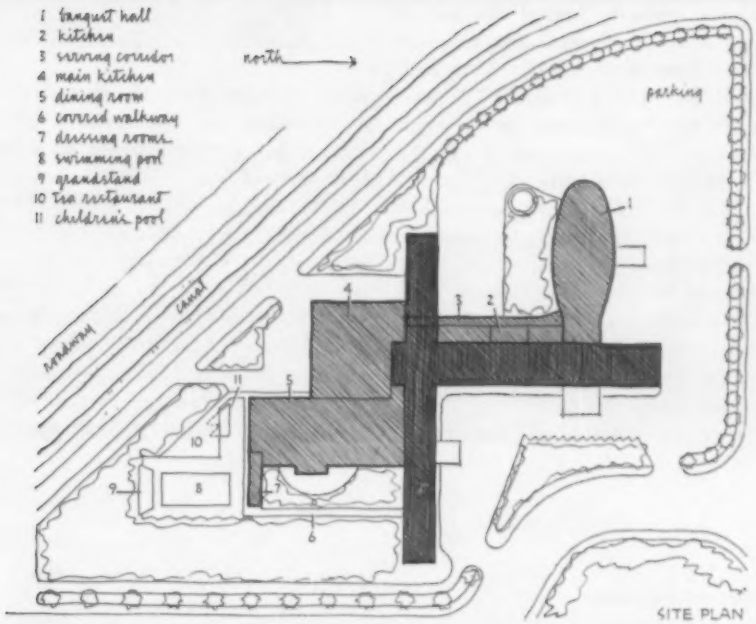
| | |
|---|---|
| location | Djakarta, Indonesia |
| architect | Abel R. Sorensen |
| consulting engineer | Edgardo Contini |





Financed by the Indonesian State Bank Industri Negara and being built in Djarkata by National Housing Development Corporation, design of this hotel is largely conditioned by the local climate. Sun in that area travels longitudinally along the north-facing façade for eight months of the year and along the south side for the remaining four months. Maximum angle of the sun on a north façade is 28 degrees to the vertical. To cope with this, long sides of the main block face due north and south. Each guest room has an exterior balcony, about 6'-6" deep, which is sun-protected by slanting, travertine sun-breakers (which also act as rain shields) set in aluminum frames. The rooms will be glazed only to door height, with open louvers above. Reinforced-concrete bearing walls (in the upper twelve floors) are supported on outward-flaring columns on the lower two floors. In the north-extending wing are air-conditioned suites. An exceptional problem that had to be solved initially was clearing away the dwellings of 800 families, most of them squatters. Instead of paying these small cash compensations and leaving them to fend for themselves, another piece of land was acquired and each family was given a lot in a planned development.





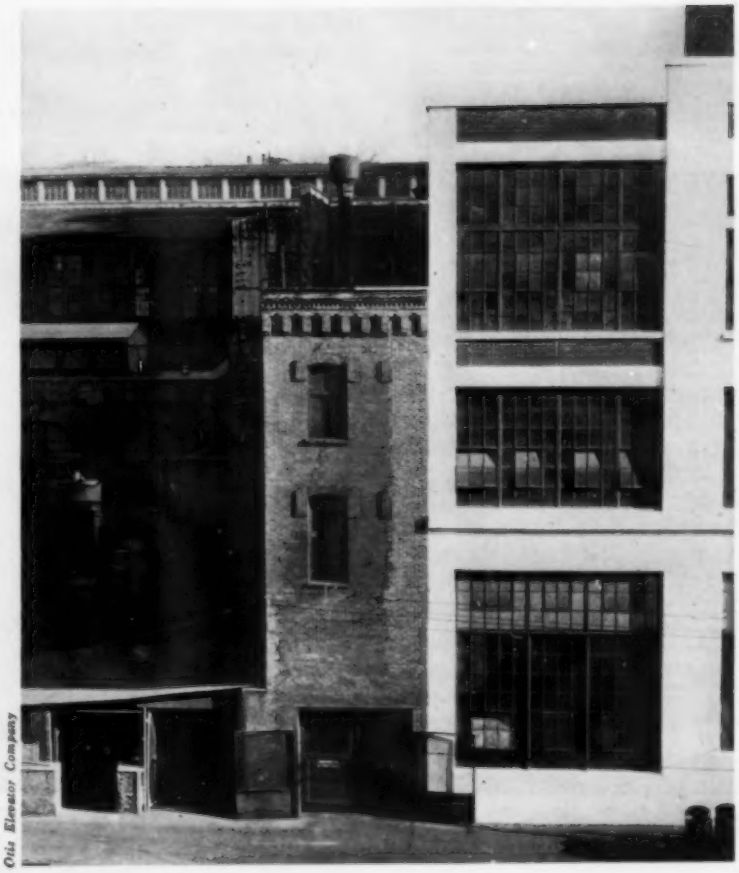
# early use of concrete in industry

Readers who have relished the wide variety of subjects chosen by Ada Louise Huxtable during the past year — ranging from the imposing Grand Central Station of the 1870's to the Philadelphia home of Dr. Jayne's Family Medicines — will be interested to learn that PROGRESSIVE ARCHITECTURE IN AMERICA begins this month (*acrosspage*) a few studies of pioneer uses of reinforced concrete in our industrial buildings.

Structurally significant in themselves, these factories of the turn of the century—when more and more rural workers were being drawn to the vitalized manufacturing centers, and outmoded factories were being replaced on a new scale—marked a plausible return to concrete, the material that the Romans had used so lavishly in their vast building booms (also pressured for speed and economy).

Their architectural and engineering monuments of concrete (*rudus*) have endured because they were built with an excellent cement compounded of volcanic dust and slaked lime. It is thought that the Romans also used an elementary reinforcing for some of their structures. Those empire builders in haste, notable borrowers, probably learned the use of cement from the Greeks, who called it *koniama* from *konis* (dust). They had, in turn, borrowed it from the Kretans, who had used white cement for floors and a clay cement for pipe connections in the Early Middle Minoac Period.

During the Dark Ages, cement (and concrete) was practically forgotten. In 1756, building the great Eddy Stone Lighthouse in the English Channel, John Smeaton found that a mixture of clayey matter could be burned to produce a cement that would set under water. Seventy-five years later, Joseph Aspden patented a formula for calcined clay and limestone,



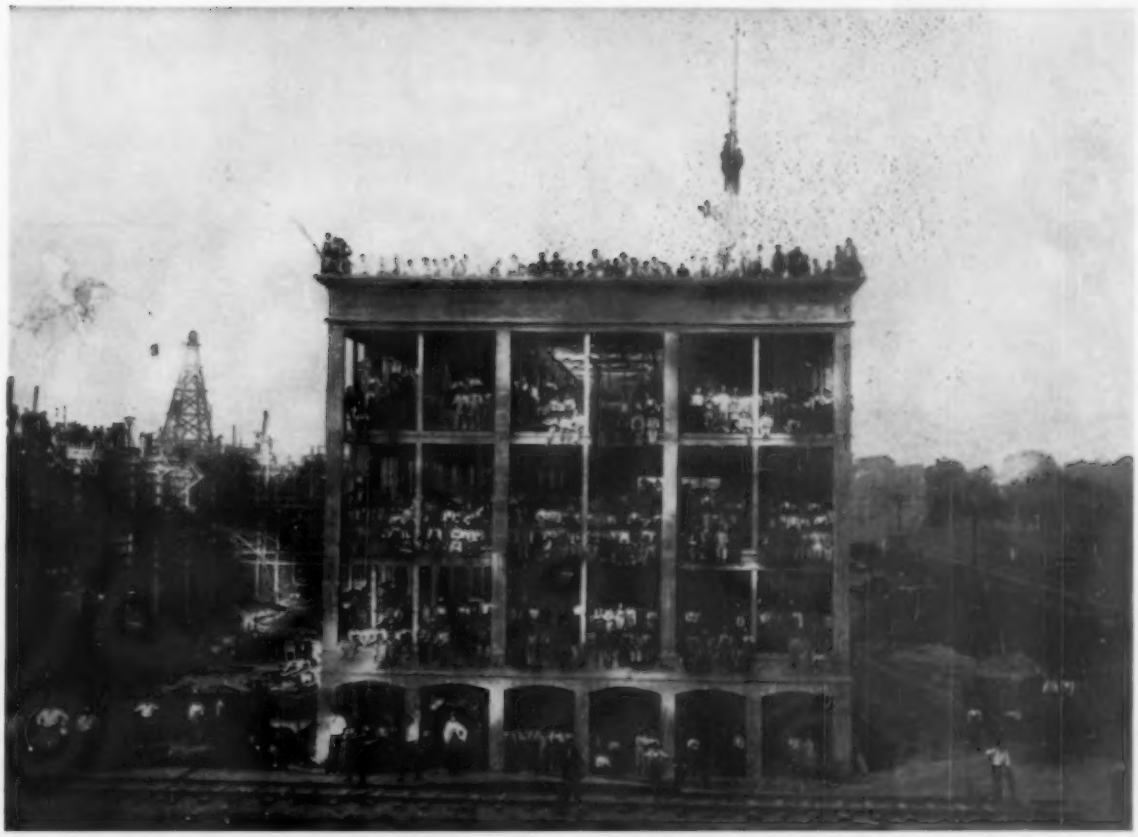
Otis Elevator Company

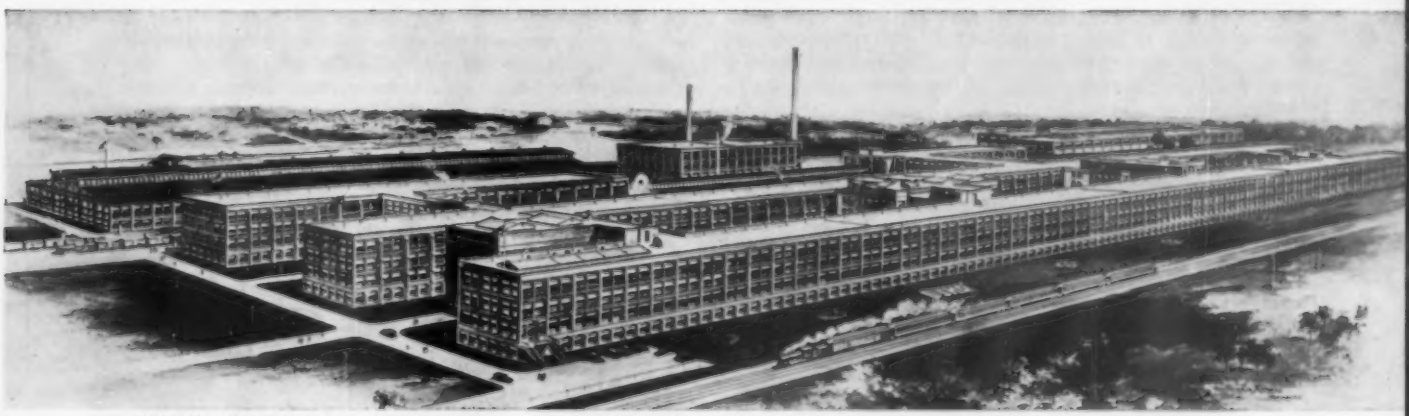
which he named Portland cement because it resembled the fashionable Portland stone. Other patents followed in several countries and thus a reliable component was at hand for concrete construction of walls, reservoirs, bridges, and finally buildings. As reinforced concrete was increasingly used, the word *ferroconcrete* was introduced (1900); to be employed with fluency by Sigfried Giedion when he later recounted the achievements of the great French pioneers in this field.

Esthetically, the new type of construction was to have unexpected impact. Architects muddled by the 19th Century shopping among eclectic fancies, as well as those who were earnestly seeking a new expression, were confronted by the success of a stark structural system quickly and cheaply produced. The exposed form was there from the beginning and concealment lost favor. Now, advises Reginald Turnor, "we must submit to the engineers and the moralists of steel and concrete. . . . no use to sigh over lost graces." C.M.

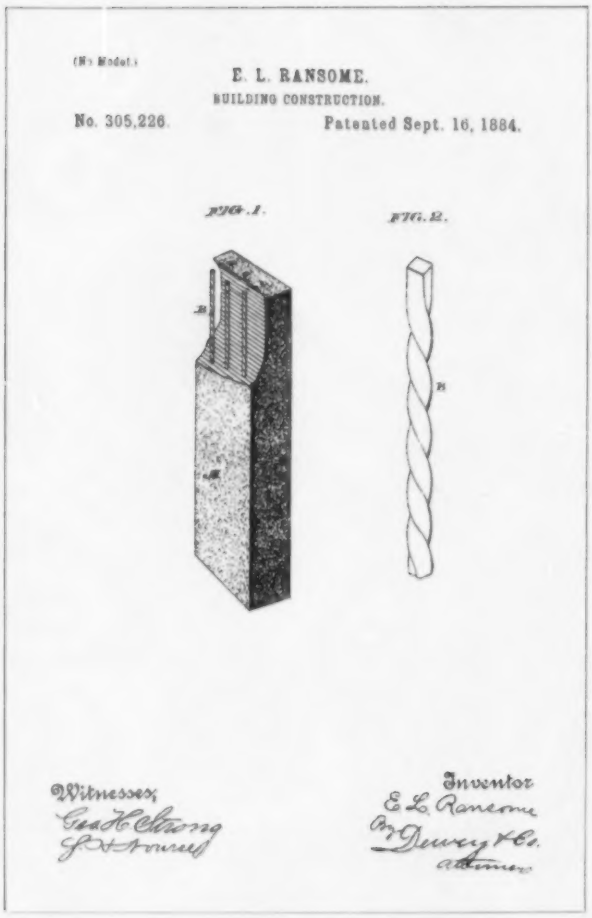
# PROGRESSIVE ARCHITECTURE IN AMERICA

## *REINFORCED-CONCRETE CONSTRUCTION*
### *The Work of Ernest L. Ransome, Engineer—1884-1911*





*United Shoe Machinery Company*


(No Model.)

E. L. RANSOME.

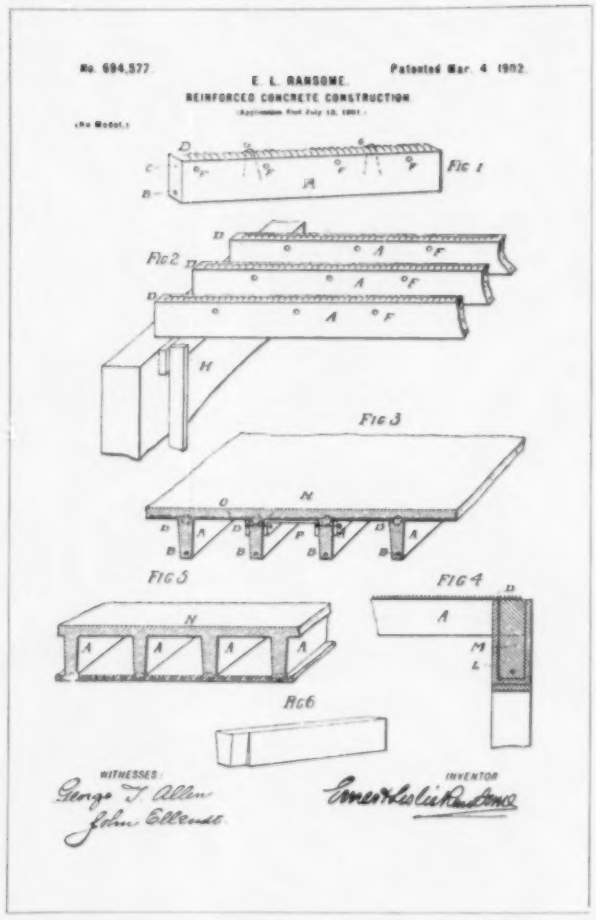
BUILDING CONSTRUCTION.

No. 305,226. Patented Sept. 16, 1884.

FIG. 1. FIG. 2.

Witnesses:
Geo. H. Strong
J. F. Powers

Inventor
E. L. Ransome
By Dewey & Co.
Attorneys


No. 694,577. Patented Mar. 4, 1902.

E. L. RANSOME.

REINFORCED CONCRETE CONSTRUCTION

(No Model.)

FIG 1

FIG 2

FIG 3

FIG 5

FIG 4

FIG 6

WITNESSES:
George F. Allen
John Ellerson

INVENTOR
Ernest Leslie Ransome

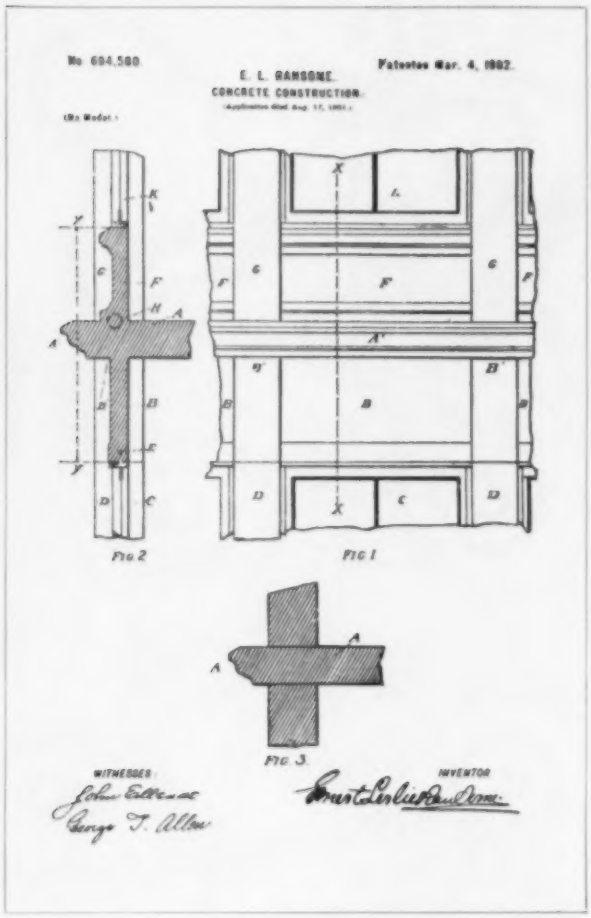
By the end of the 19th Century, American industry had outgrown its physical plant. Manufacturing operations were expanding on a scale beyond the dreams of the most imaginative Yankee pioneer and the new industrial frontiers presented a special challenge to the architect and engineer. Traditional wood and masonry buildings of slow-burning construction were no longer adequate to house the new giants of American enterprise. The moment was ripe, near the turn of the century, for the adoption of a practical, versatile, economical material that was to prove to be the workhorse of the new industrial architecture: reinforced concrete. An important American leader in the development of reinforced-concrete construction—a man whose ingenuity was responsible for innovations that have determined much of the character of today's industrial building—was Ernest Leslie Ransome. Although his influence on the contemporary architectural scene has been profound, his name is still comparatively unknown.

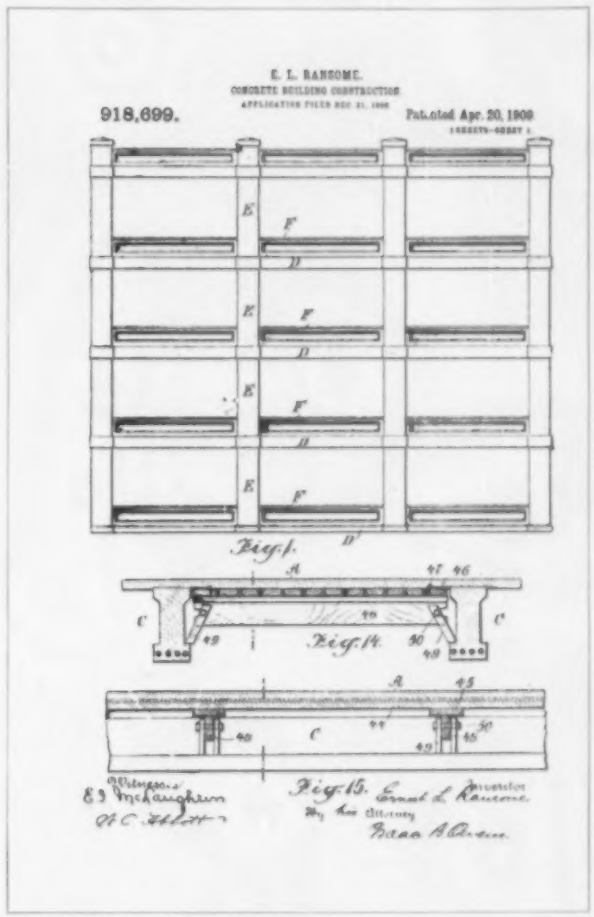
The modern history of reinforced concrete goes back to the rediscovery of cement manufacture in England in the mid-18th Century and progresses through English, American, and French developments for the first three quarters of the 19th Century. After 1875, improvements in reinforced concrete were rapid, and its use widespread. Dusty patent-office files conceal an exciting story of experiment and invention on both sides of the Atlantic, rich with implications for the architectural forms of the 20th Century.

By the 1890's, the concrete age had burst into full bloom. France took the lead, as men like Considère, Cottancin, and Hennebique improved on previous construction and design. Although Cottancin's buildings, such as the justly famous 1889 Paris Exposition *Galerie des Machines*, had a spectacular beauty prophetic of a new structural esthetic, his system did not lend itself to easy calculation; and François Hennebique may more properly be called the father of modern reinforced-concrete construction.

In the United States, the comparatively complex Hennebique method, developed in France in the 90's, proved too elaborate and time-consuming for (better-paid) American labor. A more "practical" system was urgently needed, and Ernest Ransome provided the solution. As early as 1884, Ransome patented an extraordinarily simple device that was to revolutionize American utilization of the material. By use of a twisted, square, iron rod, he created a strong, continuous bond between iron and concrete. The deformed rod did the work of more complicated two-way reinforcement, effectively and economically. It is touching to note Ransome's problems in introducing this device, which follow the familiar pattern of progress mocked by reaction: ". . . When I presented my new invention to the technical society in California, I was simply laughed down, the concensus of opinion being that I injured the iron. One gentleman kindly suggested that if I did not twist my iron so much I might not injure it seriously, in spite of all my references to the twisting of ropes and similar devices. . . . But all this criticism led to exhaustive tests, and when the professors found that my samples stood up better than the plain bars, one even went as far as to suggest that I had doctored my samples. This led me to twist half of each test bar only, and the superior strength of the cold-twisted iron was finally admitted, and in due time, when steel became common, even better results were had with cold-twisted steel."

Skepticism seemed to be the order of the day, and the many




concrete failures did little to dispel it. Captain Sewell, construction engineer of the U.S. Army, writing in *Concrete and Constructional Engineering* (London, May 1906), recounted the doubts of the period: "Considering the state of the knowledge of the properties of concrete and steel as it was ten or fifteen years ago, it is not strange that engineers looked with suspicion on a composite material, made of such diverse materials. . . . Whether they would really act as one; whether, if they did, their union would be permanent; the effect of possible differences in the rates of expansion and contraction; the effect of initial strains due to changes of volume of the concrete in setting; the possibility of the corrosion of the steel—all these were serious questions. . . . Gradually, and in the face of much persistent opposition, the new material has forced its way into public favor and official recognition." Whatever the hazards, reinforced concrete quickly proved to be strong, durable, economical, fire-resistant, quick to erect, capable of greatly increased spans, conducive to monolithic construction, and permissive of prefabrication. Its advantages were too great to admit of any discouragement.

In spite of prevailing attitudes, the firm of Ransome & Smith managed to build several large structures, either partly or wholly of reinforced concrete, between 1888 and 1890. Before 1890, Ransome erected the San Francisco Academy of Sciences, using reinforced floors and cast-iron columns; the Leland Stanford Jr. Museum, Palo Alto, California, with entire wall-and-floor construction of concrete; the Girls' Dormitory at Stanford University, a three-story reinforced-concrete building completed in 90 days from the time of letting the contract, and an addition to the Borax works at Alameda, California, which used ribbed floors and reinforced columns. The Pacific Coast Borax Works at Bayonne, New Jersey, marked the end of this first era, which was characterized by the retention of heavy walls and small windows, in imitation of traditional masonry.

The new century brought two important new developments, patented by Ransome in 1901 and 1902, which were not only structurally significant, but also were to have a radical effect on reinforced-concrete design. The first utilized a floor slab carried slightly beyond the face of the building as a belt course, with a downward extension cast integrally with the floor, and an upward extension added to it, forming window lintels and sills. This represented an extreme departure from the earlier solid-concrete-slab walls. The second departure was a system of "unit" construction, in which precast structural elements were placed in position and poured-in-place floor or ceiling members integrally united with them. Developed further from 1905 to 1909, these features led to a complete system of prefabricated parts, erected on the site, "the Ransome System of Unit Construction," patented by Ransome in 1909. From this date, Ransome shared the field of prefabrication with other pioneers: Grosvenor Atterbury, whose work with precast panels at Forest Hills, New York, spanned the years from 1904 to 1925; and John E. Conzelman, responsible for the "Unit System" of Unit Construction Company, St. Louis, Missouri, with more than 51 patents assigned to him from 1910 to 1916. It was Ransome's initial innovations, however, that established the familiar exposed-concrete frame and curtain wall of the factory style.

Several large, revolutionary factories were built under these patents, some of which are still standing today. Since they predate the Detroit buildings for the automotive industry—

*United Shoe Machinery Plant, Beverly, Mass. Still in use today, this major, reinforced factory pre-dates better known examples for the automobile industry. The buttresslike details, probably architect-added, embellish the main entrances only and conceal little of the building's impressive structural design.*

**long considered the precursors of reinforced-concrete industrial architecture in the United States—their rediscovery and study is of particular interest. Among these buildings were Kelly & Jones Machine Shop, Greensburg, Pennsylvania, 1903-04; United Shoe Machinery Company buildings in Beverly, Massachusetts, 1903-05, a major plant comprising 16 acres of floor space; and Foster-Armstrong Piano Company factory in East Rochester, New York, 1904-05, consisting of five buildings 250′ x 60′, one building 710′ x 60′, and an office building 40′ x 60′. The later "Ransome Unit System" was used in 1911 additions to United Shoe Machinery plant. The cost of the new construction, as noted in *Cement Age* (December 1904), was the same as for the traditional slow-burning type generally used at that time—approximately seven cents per cubic foot.**

**Of undeniable interest for their technical innovations, these buildings are also remarkable for their impressive and pleasing proportions, direct expression of structure, and comparative freedom from the conventional decorative details that were to "enhance" even the best of later industrial architecture, including the famous Kahn factories. As engineering and design, Ernest Ransome's work deserves a prominent place in the story of American architectural advance.**

ADA LOUISE HUXTABLE

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*Pictorial and research assistance: United Shoe Machinery Company for original documentation of its early buildings; Aly Ahmed Raafat for assistance on early history of reinforced-concrete construction prior to the work of Ransome, from his forthcoming book on this subject (Reinhold); and Portland Cement Association.*

# Lederle Laboratories, Mexico, D. F.

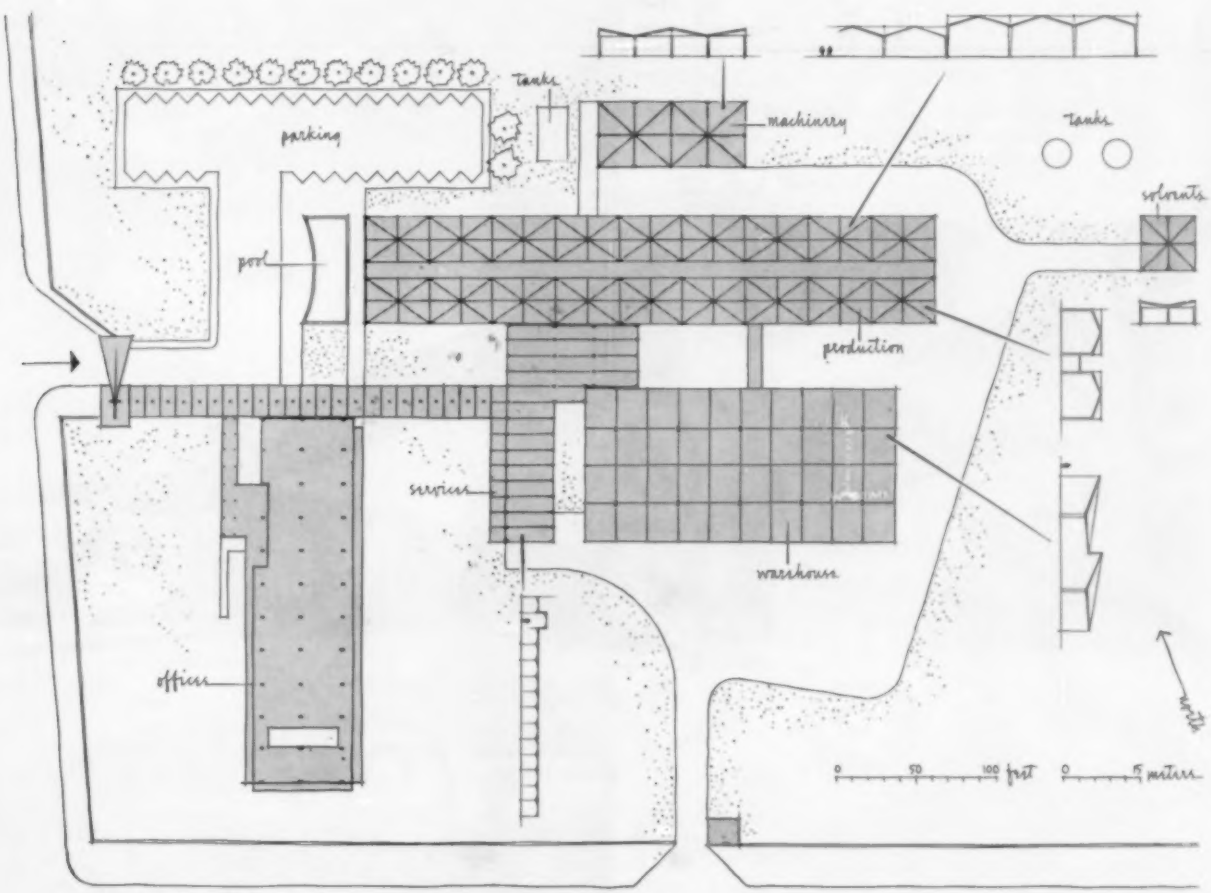
That thin-shell concrete umbrellas and scallops can be adapted to roof many types of occupancies—especially the industrial—is strikingly demonstrated at Lederle Laboratories complex in Mexico, D. F. Only the office building—to which a second story will some day be added, when the present roof will become a floor—has a conventional flat-slab type system. Fifty-four hyperbolic paraboloids—varying in size from 10′x20′ to 43′x43′—and 14 cylindrical shells and cantilevered conoids saddle an area of almost 61,000 sq ft!

Primary elements of the complex are (*site plan below*): office building; general services building for employes, containing a cafeteria, kitchen, dressing rooms, and bathrooms; warehouse divided into two sections for raw materials and finished products; production area separated for chemical and pharmaceutical products; machinery building; and a structure for inflammables.

Collocation of these various components is the result of a study of production-line techniques and the varying relationships between the different departments. The services building was placed near the center of the group, easily accessible for both administrative and production employes. The raw-material and finished-products warehouse was considered as a wing attached to the production building, with direct access to docks where trucks load and unload. Oriented north to take advantage of constant natural lighting, the production section has two rows of subdepartments flanking a central corridor. Placed over the roof passage between the two sections is a network of piping, feeding into the laboratories. Beside being economical of space, this location simplifies maintenance. The machinery and solvents buildings are separated from the main grouping.

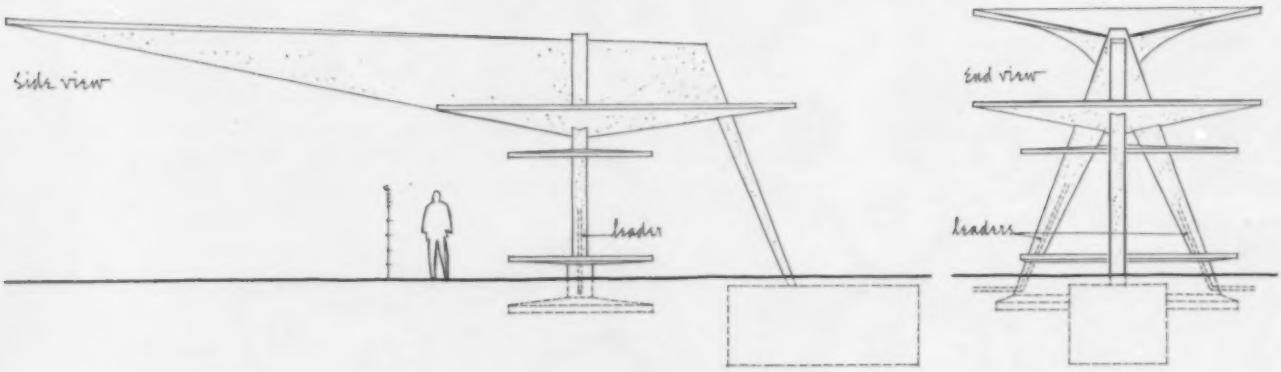
The site is near other laboratory buildings. Good water supply, drainage facilities, ease of communications, and ample room for expansion are valuable related assets.

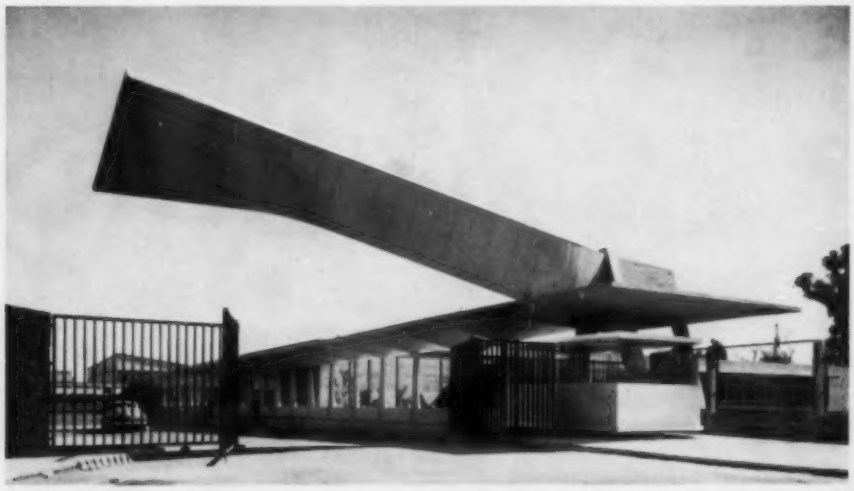
Architect for the project was Alejandro Prieto; design and calculation of all structures were made by Felix Candela; erection was by Cubiertas Ala, S. A. As is often the case in Mexico, there was no general contractor.




SITE PLAN ( roof-column pattern )

The reinforced-concrete entrance pylon, on Calzada de Tlalpam, was frankly intended to serve as an advertisement for Lederle and to attract the attention of passing motorists. It is basically a simple structure. The cantilevered wing or leaf (*ala*, in Spanish) is composed of two coupled hyperbolic paraboloids; each leaf starts at the base in a vertical plane, and ends at the outer edge in a horizontal plane. The upper edges are acting in tension and the common lower edges,



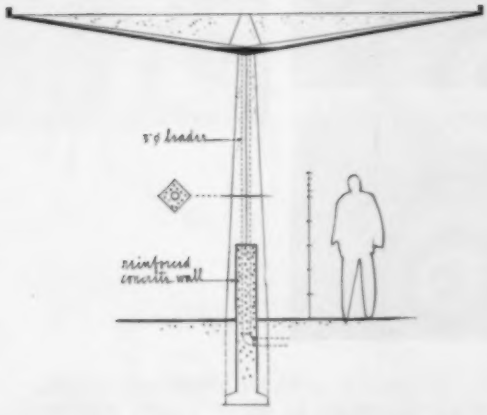
*Reinforced-concrete entrance pylon, considered an advertisement for the labs, is composed of two coupled hyperbolic paraboloids. Production building is seen in left background* (above). Photos: Erwin Lang; Antonio Candela

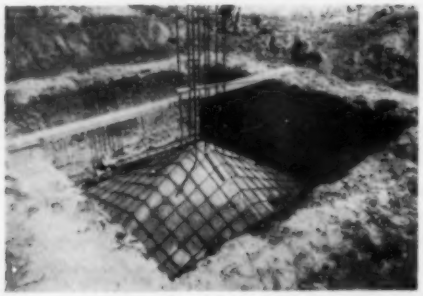
forming the groin, in compression. Since the groin is in compression, no edge beams are necessary. The entire structure is supported by a tripod, the south leg acting in tension. The latter is anchored to a counterweight underground; in a strong wind, however, it stabilizes the structure by acting as a secondary support, to prevent fluttering. One of the umbrellas of the covered walkway has been extended into the tripod to provide an expression of continuity.

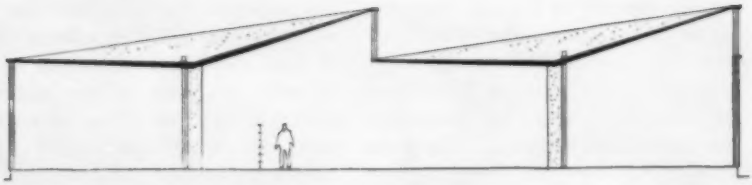
Twenty-three umbrellas, 10′x20′, provide cover for walkway from entrance pylon, past office building, and on to services structure. These umbrellas are approximately 11′ high from walkway to top of leaf. Principal reinforcement in the thin-shell quadrants of the umbrellas consists of ¼″ bars, 8″ on centers both ways; uniform thickness is 1.17″. These units were originally built to rest on 3″ pipes; however, a concrete bracing was later added to assure their stability. The piping, of course, provides the drainage for rain water shedding to the center of the umbrellas. Expansion joints are of laminated copper treated with an asphalt solution, with a fold to permit free movement of the buildings.

The office building (*below*) is a conventional flat-slab structure containing private offices, general office space, conference room, library, lavatories, etc. Natural gray stone and aluminum windows form the exterior wall.

*View of office building from services building* (left). *Umbrellas over walkway and the entrance pylon are painted white. Entrance to office building is shown* (below left).



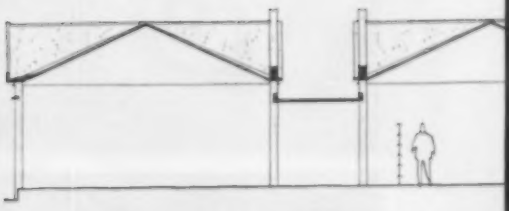




*Typical footing of warehouse* (reinforcement shown, top left) *compensates for low soil pressure. Rectangular umbrellas have become standard for low-cost warehouses in Mexico; Cubiertas Ala currently pours about 30 per week. Drain pipes were left outside column, to simplify upkeep* (far left).

The chief reason for the selection of thin-shell construction, according to the designer, was a formal one; however, the fact that this method is cheaper (in Mexico) than any other also was important. All shells are of 2000-psi concrete and a very dry 1:2:4 mix was specified. The umbrellas in the warehouse (*acrosspage*) permitted large spans with a minimum of columns. (*For detailed analysis of a similar design, see p. 114,* JULY 1955 P/A.) Floors are polished cement with ductile metallic aggregate; walls are pressed hollow block; ceilings are unfinished.

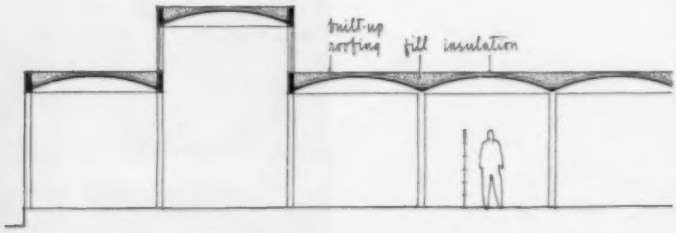
In the production building (*below*), thin-shell rectangular domes were used for the following reasons: lightness and resultant economy of foundations; ease in spanning large distances; opportunity to obtain natural light at any desired location; and cleanliness of interior form. Like umbrellas, each unit consists of four hyperbolic paraboloids; in this case, however, the supports are at the corners and the groins are horizontal. Since the borders of each unit are all acting in compression, a tie-rod is needed around the structure. Edge beams were not necessary; but were added for appearance.



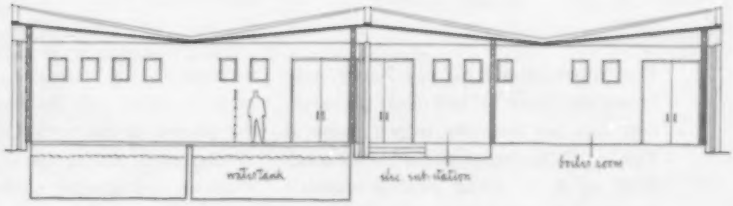
*Exterior of production building* (right) *is faced with Italian marble mosaic; walls are purple and beams of shells are yellow. Ceilings have sprayed-on acoustical treatment. Hanging catwalk, between two rows of domes, serves as passage for pipes* (above left).

Simple, long cylindrical shells roof the services building (*below*). Their very low rise is unusual. Groins are approximately 10′ on centers and the arc-rise of the under surface is only 13½″; thickness of shell is 2″. Over the walkway and entrance to the cafeteria, there is a continuous cantilever in the form of conoids—another instance where a curved surface is generated by straight lines. In the conoids, the groins or inclined edges are acting in compression and tension exists only in the horizontal part of the surface.

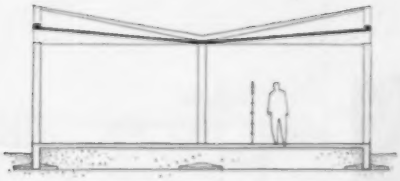
For want of a better name, the designers call the building for solvents and inflammable materials *mariposa*—butterfly (*acrosspage*). It is one more variation of the square or rectangular plan being divided into four equal hyperbolic paraboloids. In this case, the columns are in the center of each side, and the peaks are at the corners. The two intersecting, horizontal groins are in tension (no visible tie rods) and the edges act in compression. This same form, paired, has been used to cover the machinery building.



*Services building is roofed by cylindrical shells which have low arc-rise. Hall between production and services buildings is shown* (above).



*Machinery building is located on north side of production structure* (above *and* right).



*Butterfly structure* (left *and* above) *is for storage of inflammables. All shells are waterproofed with felt-and-asphalt layers, plus aluminum foil and a protective cover of red dust.*

# lighting design for actor's home

Ronald Reagan and his wife Nancy, well-known and liked TV and movie personalities, may not have the largest house at Pacific Palisades, California—although 4100 sq ft of living area is certainly ample—but it's safe to say that they have one of the best-lighted residences in the world. The top-quality lighting and remarkable degree of control, intimately suited to the Reagans' living pattern, is not only the result of Eugene W. Commery's meticulously thought-out design but also is a reward for early collaboration during the preliminary design stage between owner, architect, and interior and lighting designers.

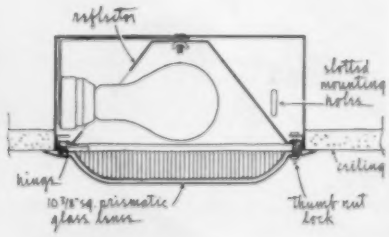
The site—on the southern slope of the Santa Monica Mountains—by day affords an unlimited view of Los Angeles and the ocean with the Catalina Islands immediately beyond. At night, millions of lights from the city form a vast, colorful, twinkling carpet below. The interior plan evolved toward this view, the sun, and the moon in its varied phases. Since the problem of furniture scale and placement as well as location of all equipment were resolved at the outset, it was possible to approach the lighting design specifically.

The design approach included the following basic considerations: (1) avoid reflections in the extensive glass-window areas at night; (2) localize and control the interest in and within different areas (living room, dining room, atrium, den, entrance, and adjacent outdoor living terrace) so that all may be blended together or harmoniously separated; (3) range of effects should be from subtle to near theatric, yet never obtrusive or ostentatious; (4) while passing from room to room, there should be pleasant changes of pace—if functional lighting is required, it should measure up to well-established standards of performance, or if atmospheric lighting is preferred, the proper means of control should be provided; (5) design should maintain a unity through the house—to be achieved through amounts of light in each room and by values of colors used on walls and ceilings; (6) provide possibility for changes of pace in lighting to accommodate normal family living, or low-tempo or high-keyed entertaining.

Large areas of movable glass, across the front of the house, not only bring the magnificent view inside but also allow easy passage to and from the swimming pool. To illuminate the outdoor areas, recessed fixtures with prismatic lenses were installed in the soffit of the prominent overhang (*detail below*). These lenses produce an asymmetrical distribution of light, which fans out along one axis parallel to the sides of the outer walls, falling on the walk below, reducing glare to persons who may be in the living room, in the pool, or on the terraces, and maintaining even, subdued light on the walls. One such unit was turned 90 degrees to highlight the barbecue area (*note highlight in photo*).

In the living room, each basic lighting group may be increased or decreased in lighting value to create different moods or to meet the needs of specific furniture arrangements. All fluorescents in the living room and surrounding areas may be dimmed. To offset the dominant long axis of the dining-living-entry axis, a glass-and-stone enclosed atrium was placed in the center of the plan. Both day and night light, entering the center of the house at this point, produce cross-lighting effects that consequently increase the apparent depths of areas that open into it. During windy and chilly weather, the atrium serves as a patio for sun bathing: a canvas roof may be rolled down along the open rafters during inclement weather

Design and specification of the recessed down-lights in the dining room required

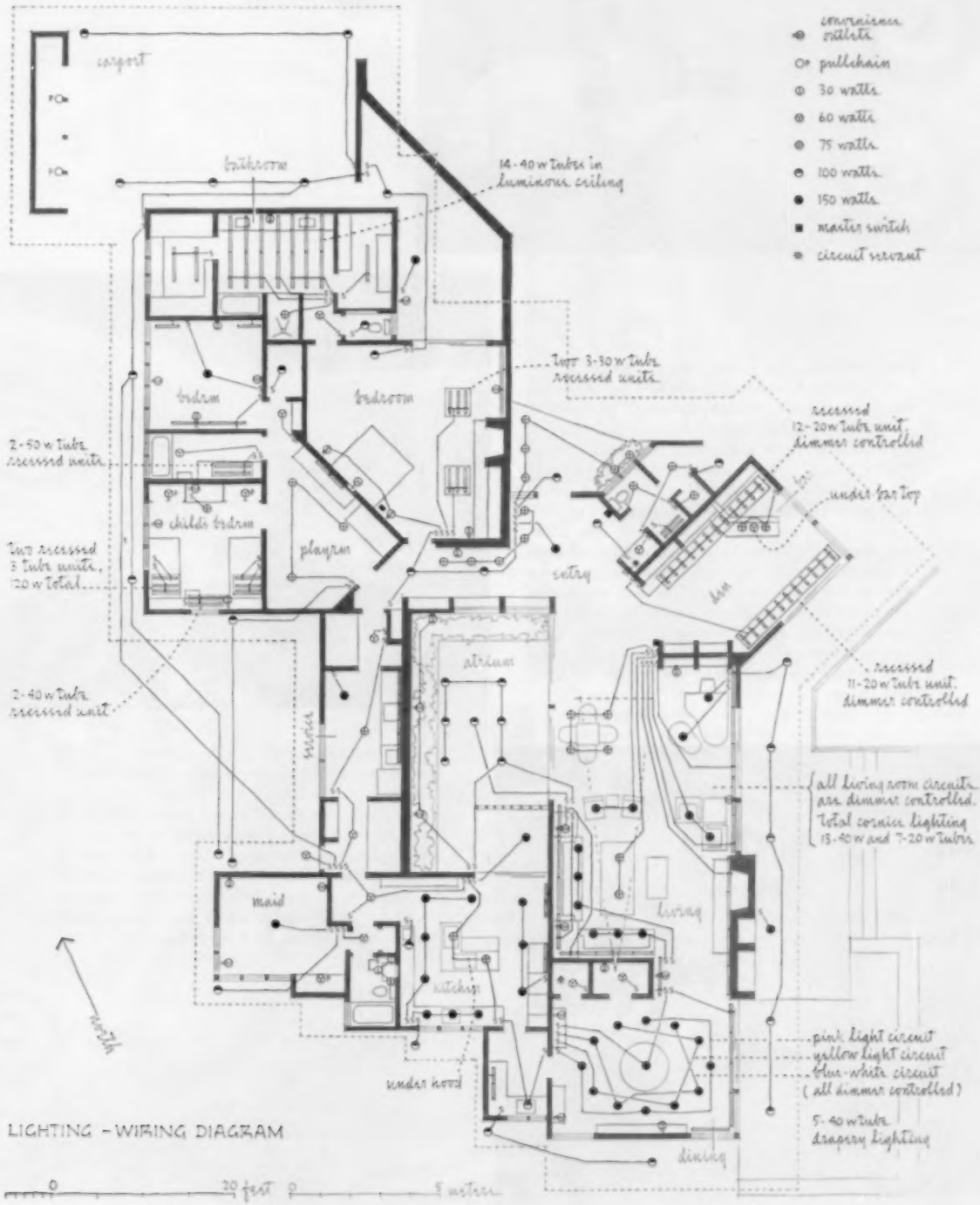



**Exterior**—*The luminosity of the exterior and interior is ready to take over as daylight recedes back of the mountains. Much of the interior lighting is subject to control from full bright to night dimness, to suit the mood and the occasion from room to room. Detail of soffit light is shown.*

special consideration, since few commercially available items of equipment can be used entirely successfully. This situation is due to the fact that open, concentric-louver bottoms are generally not deep enough to permit the use of color reflector lamps which have an over-all length of 6⅞" (*detail page 153*).

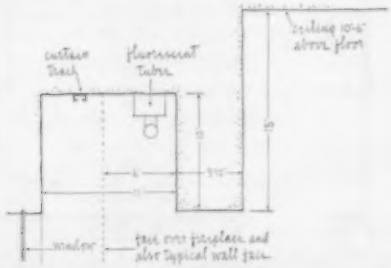
The master bedroom, adjacent to the child's indoor-outdoor play area and other bedrooms, is oriented to receive the morning sun. The nearby service area—which contains two all-year round air conditioners, washers, dryers, and an ironing center—allows for supervision of play and also serves as an inside passageway from the maid's quarters to either the front entrance or the bedroom wing of the house.

Architect was William R. Stephenson; Interior Designer, Helen Conway; Lighting Designer, Eugene W. Commery, of General Electric Company, Nela Park, Cleveland—Fellow of Illuminating Engineering Society.




LIGHTING – WIRING DIAGRAM

**Living Room,** *through to end of dining room—Day-view shows the natural cross lighting from the atrium on the right and the front of the house on the left. Cornice provides space for fluorescent lamps and traverse tracks* (detail below). *The wall ahead contains the projection booth; the painting slides to the left to uncover the opening in the wall; beyond, the end of the dining room is seen. Six-ft overhangs shield from the sky. Colors: carpet, medium to light charcoal gray; walls, off-white on red wood; furniture frames black; stone: light, warm earth tones; sofas soft yellow; chair off-white; pillows accent red, yellow and green.*



**Living Room,** *sofa corner—A close up of the cornice, down-lights, wall texture, and furniture illustrates the lighting-design principles employed elsewhere in the living room. Two systems built into the structure are supplemented by strategically placed table lamps. Wall washes of light are available from both sides of the room from dimmer-controlled lamps and can be switched to establish one area and play down another. Various light values are also available. The broad, soft, cross-lighting from lighted wall areas of off white is visually pleasant. At night, the lights of the city may be viewed by turning off the wall washes and using only the down-lights in the ceiling. In this way, interfering room reflections from the extensive opposite windows are virtually eliminated. Each accent light is carefully placed from the preplanned furniture layout.*

**Atrium** *from Living Room—In addition to the six blue-white reflector lamps, a center, pink, reflector lamp may be added to produce iridescent color pools on the black-slate floor. Concealed back-lighting behind the low planting provides another variation: a high contrast, low-key effect. These effects may be used alone or together, through separate switches. The screen on the left is backed with white, diffusing plastic and acts to shut off direct view of the kitchen. A single-tinted lamp behind sets the screen off in any selected tint, in harmony or contrast.*

### switching for lighting

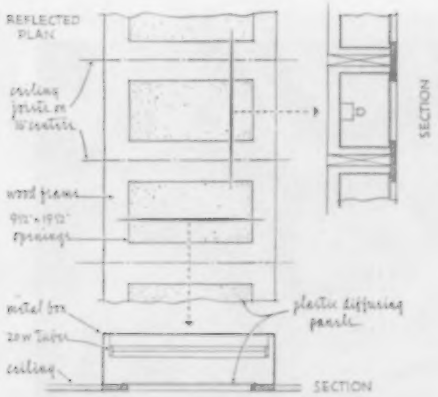
Throughout, remote-control wiring was used. In addition to carefully placed switching throughout the house, often with several or more points of control, there are four circuit servants. Each of these has a motor drive that can sweep on or off 25 individual switches independent of the position in which the individual switches may be. In this way, entire sections of the house may be turned on or off without going to the individual switches. Master switches for all *interior* lighting are located in three places. These same locations also have master switches for control of all *exterior* lighting.

### electric service for lighting (in use)

Designed interior lighting requires an average of 3.7-w per sq ft and supplies 68 lumens per sq ft.

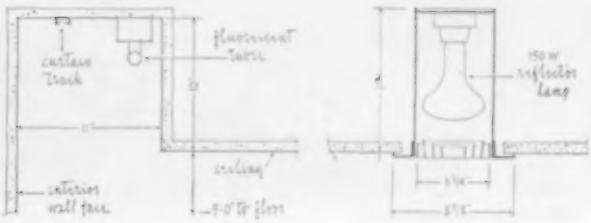
| | |
|---|---|
| *Interior:* | |
| Fluorescent (Home-Lite color) | 3.780 kw |
| Incandescent | 11.385 kw |
| Total interior | 15.165 kw* |
| *Exterior:* | |
| Incandescent (functional) | 3.345 kw |
| Incandescent (decorative) | 1.200 kw |
| Total exterior | 4.545 kw |
| *Interior-exterior total* | 19.710 kw |

* *Breakdown of lighting load by lamp types: 25% fluorescent; 69% incandescent-reflector lamps; 36% inside-frosted lamps.*



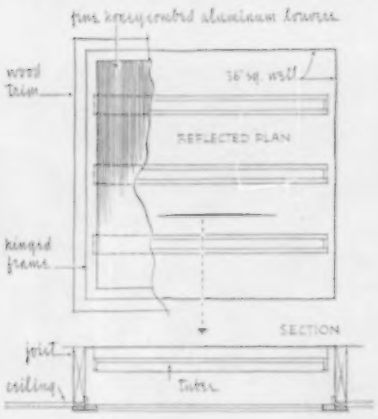

**Den Lounge**—*Two sides of this room open on one of the great views of the city and ocean, below and beyond. The lighting may be dimmed to values that make it seem as though the lighted recessed panels above have become openings into the sky* (details above). *Either sides of the room may be separately switched and dimmed, depending upon the use to which it is put. Colors: carpet, same as the living room; woodwork and game table, black; game chairs, soft red; stools, white leather and high polished brass; drapery, background off-white with green and cherry-red flower design.*

**Dining Room**—*The 12 ceiling lights are composed of four sets of three-color tints; blue-white, pink, and gold. The room may be lighted with any one of the color tints from high to low, or mixtures of two and three tints may be used together. Three dimmers, one for each color tint, offer a maximum of control to the extent of mixing the three colors to provide a clear and vital "white" light. The light at all times is primarily directed to and reflected from the floor to the entire room. The room acts as a color blender, although blending pools of tinted light strike the floor around the table. The crystal chandelier, also under dimmer control, acts as a lighting foil and as a central point of interest. Colors: carpet, same as living room and den lounge; walls, drapery, and ceiling, off-white; furniture, black; seats, brilliant but slightly grayed yellow.*



**Master Bedroom**—*Luminous, recessed panels, 3' square, are placed over and slightly to the rear of each of the lounge reading chairs* (detail, below left). *Honey-comb aluminum-foil louvers across the bottom of each provide shielding and blend into the surroundings. Three fluorescent lamps in each provide a broad but controlled spread of soft light throughout the room, with emphasis directly beneath each panel. The reader can assume any position and readily scan or read any part of a newspaper page. For those times when a less effective but more intimate effect is desired, the lamps may be used alone. The combination of lamps and panels supplies a high degree of visual comfort. Colors: carpet, light, soft rose pink; walls and ceiling, off-white; stone, same as used in living room and atrium; drapery and upholstery, light gray and white background with several values of lipstick red flower motif.*

**Master Bedroom** *bed—Matching, large-scale bedside lamps with off-white shades. Special recessed miniature reflector lamps over bed are for short periods of reading. Color: off-white wall, ceiling and bed headboard, bolsters, and spread.*



**Child's Bedroom**—*Luminous panels, 2' x 3', similar to those used in the master bedroom, are placed directly over each bed. Each contains three fluorescent lamps and may be switched to provide high, medium, and low values of light. The unlighted large center panel, 4' long, will be lighted when the desk is used. Colors: off-white walls and ceiling; cherry-red carpet. Curtains: off-white trimmed with cherry red.*

**Master Bathroom**—*The soft, rose-pink carpet color of the adjacent bedroom is continued here, while gray-white and lipstick reds prevail on the walls. Over-head, the corrugated-plastic ceiling casts a diffuse and abundant light above and below, including the tub alcove and enclosed shower reflected in the room-width mirror. The magnifying concave mirror, complete with built-in lighting, provides facilities for critical facial examination and make-up.*

**Child's Playroom**—*Three white-plastic bubbles are placed out from the corners of a triangular room. Each of the three bubbles contains a single coloramic lamp—one pink, one gold, and one blue. The small aperture, which is in the bottom of each, is of special value over the small daybed. This off-white room is transformed each evening when the lights come on.*

**Principal Lamp Types and Their Locations**

| | Incandescent filament | | | | Fluorescent "Home-Lite"[1] color | | |
|---|---|---|---|---|---|---|---|
| | 75-w R-30 Reflector | 150-w R-40 Reflector | 150-w R-40 Color Reflector | Inside Frost | 20-w | 30-w | 40-w Rapid start |
| Entry, exterior | 5 | | | | | | |
| Entry, interior | 2 | | | 1 150-w | | | |
| Front hall | 3 | | | 2 100-w | | | |
| Atrium | | | 7 | | | | |
| Living room (recessed) | 6 | 12 | | | | | |
| Living room (cornice) | | | | | | | 13[3] |
| Den-lounge (recessed) | 2 | | | | 23[2] | | |
| Dining room (recessed) | | | 12 | | | | |
| Dining room (drapery) | | | | | | | 5[3] |
| Pantry | | | | 1 100-w | 2 | | |
| Kitchen | 2 | 10 | | | 4 | | |
| Service hall | | 1 | | 1 75-w<br>2 60-w | | | 3 |
| Master bedroom (ceiling panels) | | | | | | 6 | |
| Bathroom (luminous ceiling) | | | | | | | 14[3] |
| Child's bedroom (ceiling panels) | | | | | 6 | | 2 |
| Playroom | | | | 3-Coloramic (75-w) | | | |
| Exterior overhang | | | | 18 100-w | | | |

[1] Formerly "Deluxe-Warm" color
[2] Line voltage varied with reactance dimmer-trigger start ballasts 20-w
[3] Dimming 40-w ballasts used with reactance dimmer

# *The Aggregate-Transfer Method of Surface Treatment*

*by Harold J. Rosen*

An economical way of obtaining an attractive treatment in architectural concrete can be achieved by a method known as aggregate transfer. This system provides for the embedment of selected, colored aggregates in the exposed surface of cast-in-place architectural concrete. By this method, the more expensive aggregates such as marble, granite, or ceramics are confined to the outer surface of the concrete, creating an attractive appearance at reduced cost.

The aggregate-transfer method of surface treatment is briefly as follows: The selected aggregate is held in an adhesive on form liners, the liners are installed in the forms, concrete is placed and cured, and finally the forms and liners are removed. The aggregate becomes embedded in and bonded to the concrete to such an extent that it is transferred from the liners to the concrete. In addition, special textures may be achieved by using different methods of preparing the liners or by giving the exposed surface various treatments.

The form liners (¼-in. plywood) are fastened to a vibrating table and a special adhesive spread over the liner. The adhesive should be water resistant, to withstand rain or wet concrete, and be strong enough to prevent dislodgment of aggregate particles when the liners are handled or when concrete is being placed. Aggregate is applied immediately after the adhesive has been spread. The aggregate should be uniform in size, dry, and well shaped for adequate embedment in the concrete. Aggregate may be spread by hand when small areas of liners are to be covered, or may be spread by means of a small V-shaped hopper over larger areas. After the aggregate is spread, the liner is vibrated to assure uniform surface coverage, and any additional aggregate needed is added by hand. After the aggregate has been placed, the adhesive should be allowed to dry for at least 24 hours before the liner is used. After the adhesive has hardened, the liner panels should be placed on edge so that excess aggregate will fall off. The liners should then be inspected for uniform and complete coverage and, where necessary, additional aggregate should be applied.

The form liners are then fastened to the concrete forms with ⅝-in. wirebrads, spaced about 6 in. on centers at the edges and on 16-in. centers intermediately. The vertical joints of the form liners are staggered with respect to the vertical joints in the concrete forms. The form liners must fit snugly and be exactly flush at abutting edges, to avoid objectionable joint marks. In addition, to prevent leakage at the joints, the edges should be calked with a narrow strip of suitable calking compound. The reinforcement is then placed, and tie-rod holes drilled from the inside face toward the outside.

Before the concrete is placed, the forms should be wetted with a moderate water spray to prevent loosening of the aggregate. Concrete of good workability (an air-entrained concrete is recommended) is then placed in the forms. The concrete mix should contain not more than 6-½ gallons of water per bag of cement and not less than 5-½ bags of cement per cubic yard of concrete. The concrete should be placed in layers about 12 in. deep and each layer thoroughly vibrated internally. When the concrete has hardened, the concrete forms are removed first and the aggregate transfer liners are stripped from the walls later. Usually the liners are taken off after 5 days. If the liners are not to be reused they may be left on for a longer period, to permit thorough curing and to protect the wall surface during the construction period.

Imperfections that may occur in the surface may be patched so that the fault will be difficult to detect. Patches should be made before the entire surface is to be finished. The defective area is chipped out to a depth of ¾ to 1 in. It is then wetted and filled with mortar mixed to a stiff consistency with 1 part cement and 2½ parts sand. The mortar is placed in two coats, each ⅜ to ½ in. thick on successive days. The second coat is struck off ⅛ in. below the wall surface and while the mortar is still soft, grout-coated particles of the matching aggregate are troweled in until an aggregate coverage similar to the surrounding area is obtained. The grout-aggregate mix is made with 1 part cement, 2 parts sand, and 6 parts aggregate with a minimum of water. After the patch is made it is compacted, floated level, and kept damp for about 5 days. The entire surface is then finished as required.

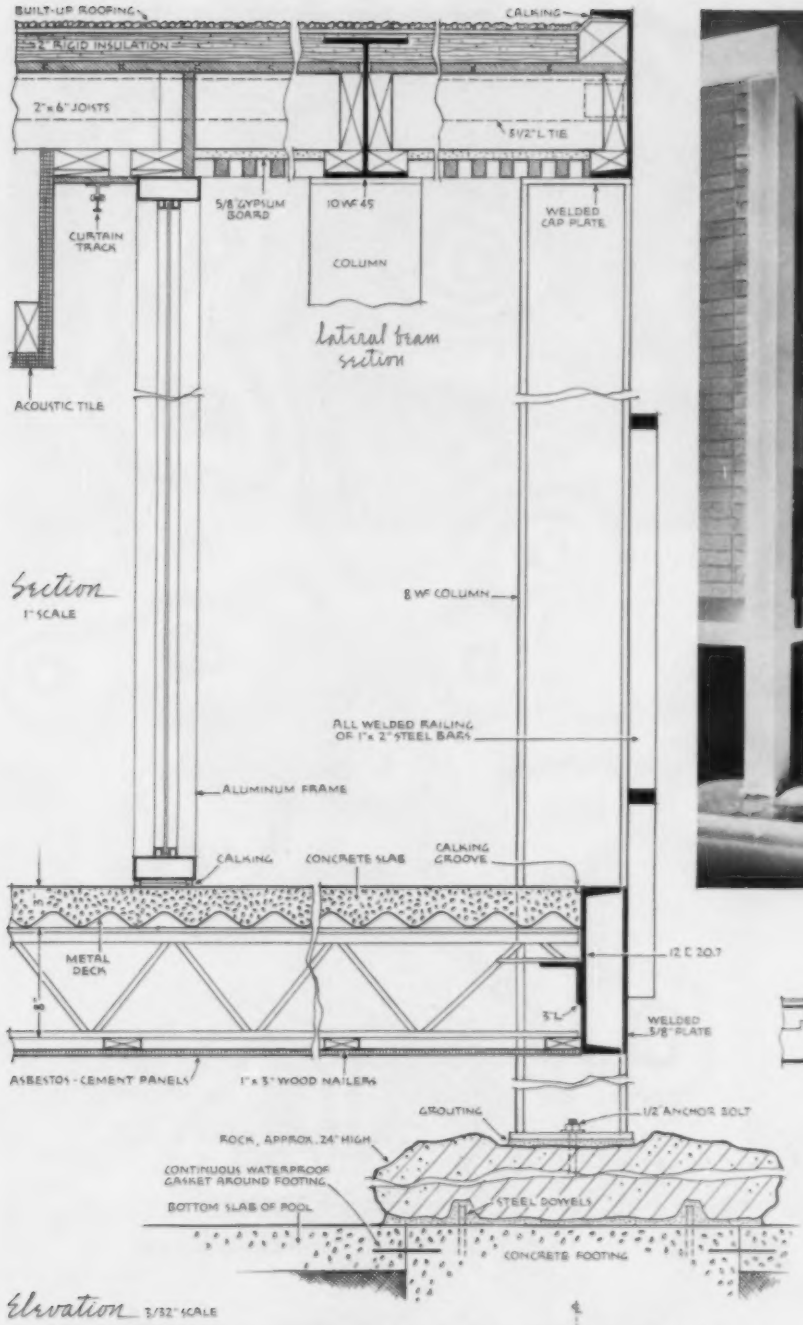
Pleasing surface textures can be obtained economically without surface treatment by varying the manner in which adhesives and aggregates are placed in the liner. Spreading the adhesive with a trowel having 7 points per in. gives a light reveal, while using a trowel with 5 points per in. produces a heavy reveal. A rough texture can be achieved by producing a built-up adhesive which is subsequently wire-brushed away to remove excess adhesive from the face of the finished wall and exposing more of the aggregate. Veined finishes and sand finishes can also be produced by the addition of perlite plaster or sand to the adhesive.

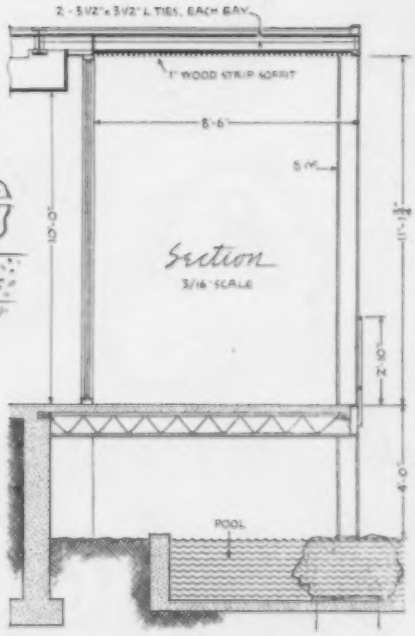
In addition, a number of textures may be produced by surface treatment. The concrete should be cured at least 14 days before any surface treatment is started. Rough textures may be obtained by bush hammering or sand blasting. A smooth or polished surface can be produced by dry grinding.

The Portland Cement Association in a pamphlet entitled, *Color and Texture in Architectural Concrete by Aggregate Transfer*, describes in great detail the equipment required, the recommended procedures for detailing corners, construction joints, and the entire subject of the system for aggregate transfer.

porch

JULIUS SHULMAN

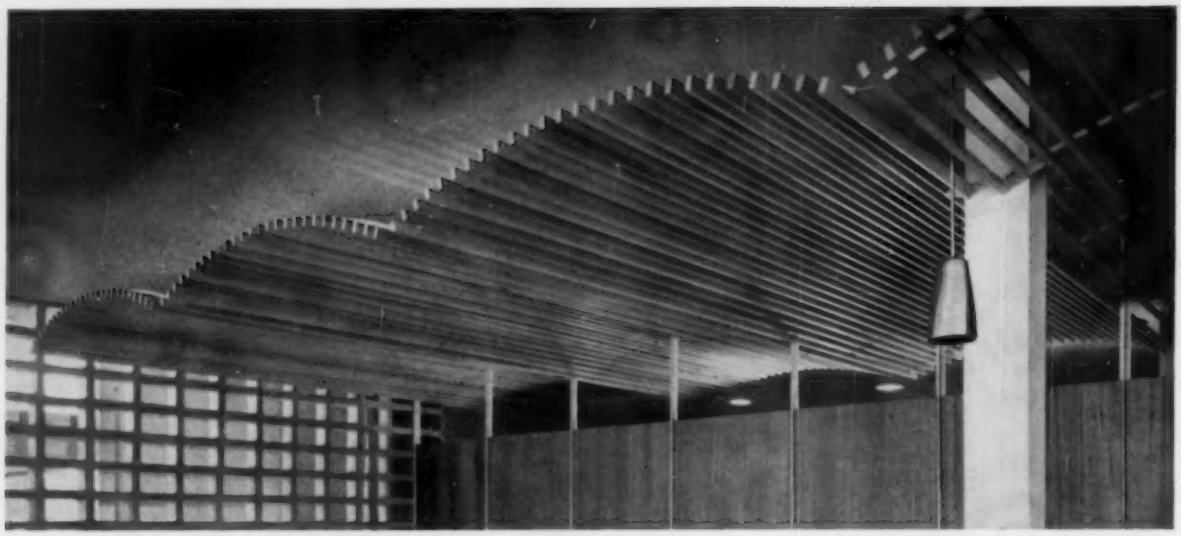


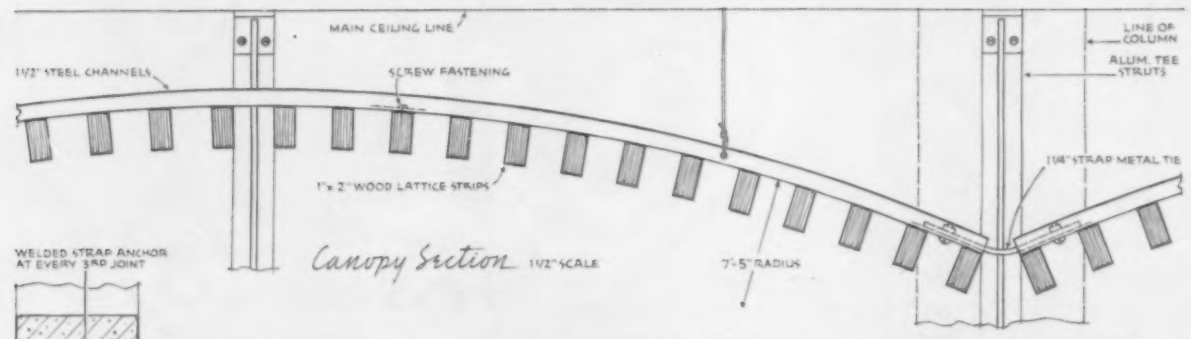

**DESERT MOTEL, Tucson, Ariz.**

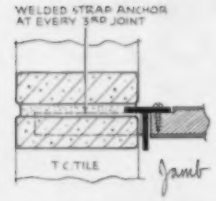
**Hausner & Macsai, Architects**

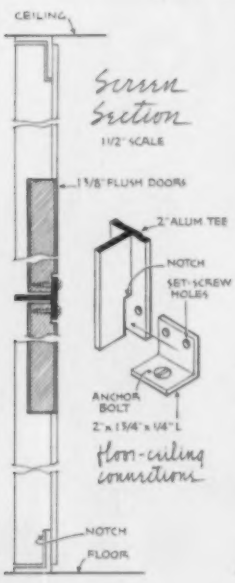
# hung ceiling

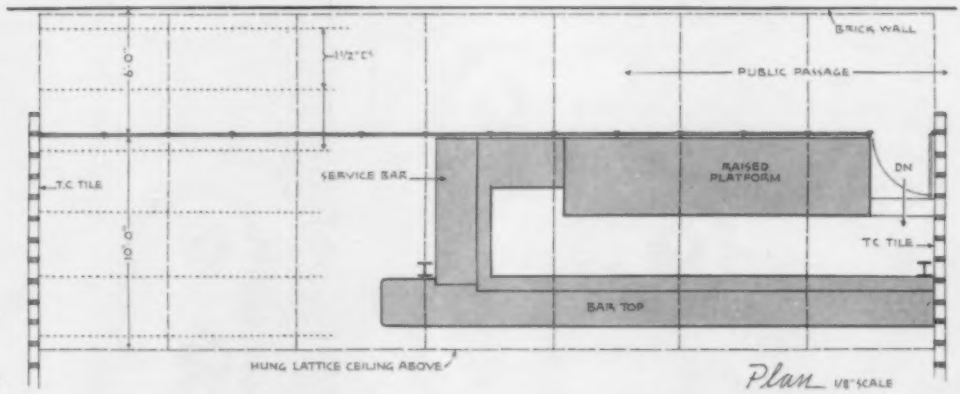


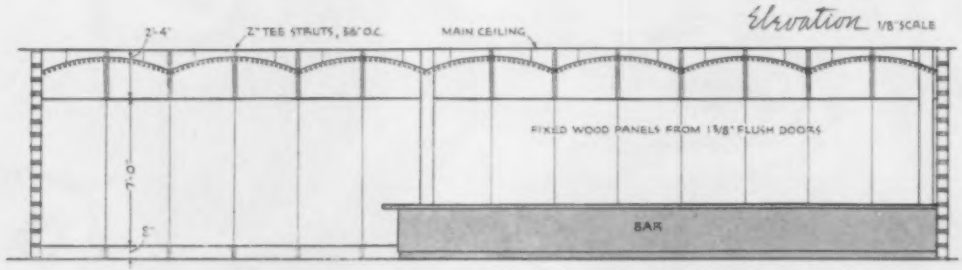
JULIUS SHULMAN




**DESERT MOTEL, Tucson, Ariz.**
**Hausner & Macsai, Architects**

**Notice the** beautiful monolithic surface of KILNOISE, with no interrupting joints or seams.

Silver Springs at Ocala, Florida. Architect: Victor A. Lundy, A.I.A., Sarasota

# Unspoiled beauty with KILNOISE ACOUSTIC PLASTER

WHEN KILNOISE Acoustic Plaster was chosen at fabulous Silver Springs for its superior sound-absorption qualities, it also paid a big bonus in beauty.

Unmarred by joints, lines or seams, the natural soft white color of the KILNOISE ceiling surface offers interesting eye-appeal while creating a pleasant air of spaciousness.

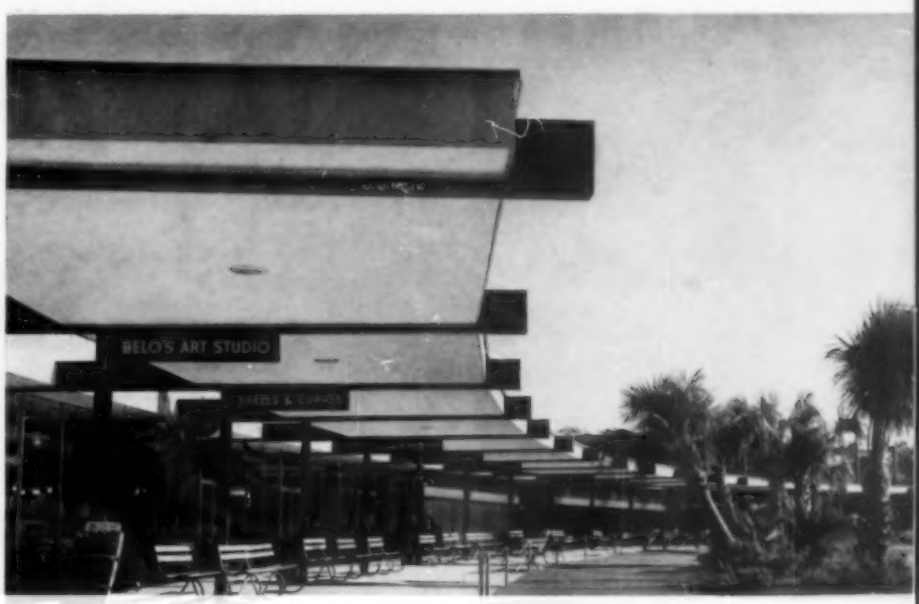
Completely unaffected by moisture, KILNOISE is used both indoors and outdoors at this well-visited Ocala, Florida, resort. The operators of Silver Springs are pleased, too, with the remarkably low maintenance cost of KILNOISE. Just a soft brush has been needed occasionally to keep it white and clean.

For functional beauty, excellent sound-absorption, high light-reflectivity, low maintenance, fire-retardance and moisture-resistance, KILNOISE Acoustic Plaster is unsurpassed by any acoustical material whatsoever.

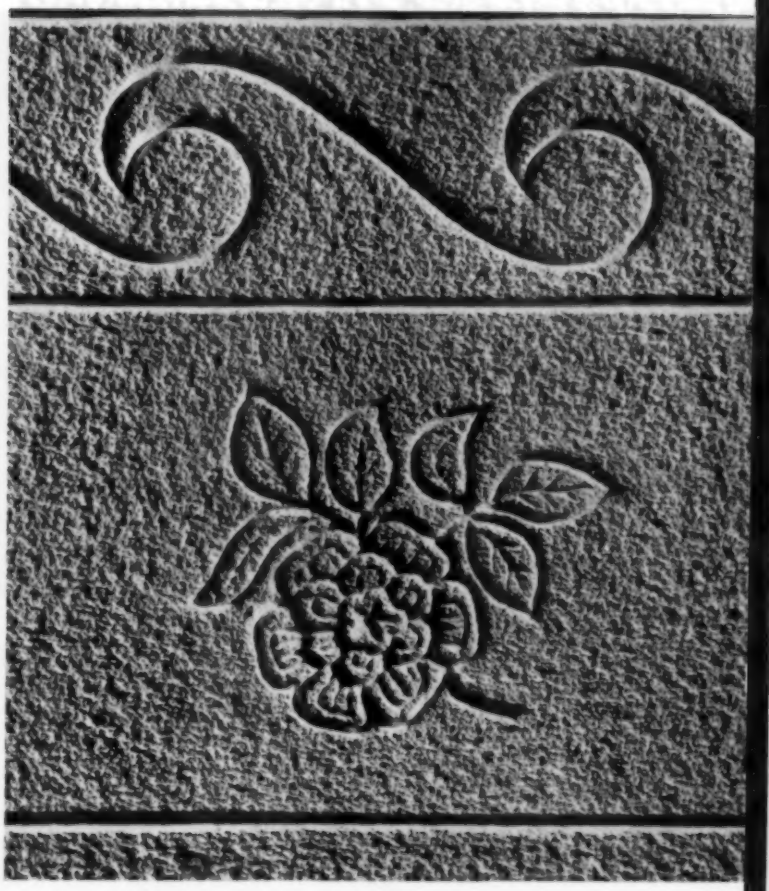
*The most beautiful acoustical material is*

**KILNOISE**
**ACOUSTIC PLASTER**

**TIGER BRANDS INCORPORATED**
*division of Basic Incorporated*
845 MANNA BUILDING — CLEVELAND 15, OHIO



# For added beauty... KILNOISE with Impressed Design



A VERSATILE new "tool" of the modern architect is the interesting technique of Impressed Design...first and most successfully used on KILNOISE.

When designing interiors for clubs, schools, stores, institutions, even residences, you find unlimited opportunities for unusual effects by adapting any motif for your Impressed Design...floral, emblematic, geometric or contemporary.

Simply make a tracing of your design if you wish to highlight wide expanses of either wall or ceiling plaster...plaster craftsmen do the rest.

**DON'T OVERLOOK THESE OTHER KILNOISE FEATURES!**

## KILNOISE®

**ACOUSTIC PLASTER**

TIGER BRANDS INCORPORATED—DIVISION OF BASIC INCORPORATED—845 HANNA BLDG., CLEVELAND 15, OHIO

**Increased Sound-Absorption**—Many thousands of tiny interconnected pores render KILNOISE highly sound-absorbent. Stippling and random-perforating the surface provide a high noise reduction coefficient of .60.

**Complete Fire Safety**—KILNOISE is an all-mineral acoustic plaster. It is one-hundred-per-cent non-combustible...and a positive fire barrier.

**Maintenance**—KILNOISE acoustic plaster sets monolithically with a hard, durable surface which can be painted (with a water base paint) repeatedly *without materially reducing its sound-absorption qualities!* This surface can be kept constantly attractive by quick, easy cleaning.

**More Light Reflectivity**—KILNOISE provides light reflection excelling that of most other acoustical materials. This furnishes an extra margin of safety where proper lighting has become an increasingly important factor.

**Higher Moisture Resistance**—Wherever humidity is high, other materials may crumble, rust, stain or warp. But KILNOISE is impervious to moisture, making it the ideal ceiling for swimming pools, bathrooms, laundries, shower rooms and other high-humidity areas.

A.I.A. File No. 39-B

*Please send, at no obligation, above* **KILNOISE** *sample and full information on Impressed Designs.*

Name

Firm

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Place 2¢ stamp here

**KILNOISE**
**TIGER BRANDS INCORPORATED**
*division of Basic Incorporated*
BOX 333
845 HANNA BUILDING
CLEVELAND 15, OHIO

Louise Sloane

# advertising agency offices

Eloquent design is the requisite to project the special story of the advertising agency, whether the message bespeaks the agency's blend of reliability-plus-imagination to the conferring client, or is used to stimulate and soothe the specialized personnel.

In the three examples of advertising agency offices that follow, three such designs have been achieved in different ways, yet each conveys a convincing "sales talk" about the "product"—the agency itself. Dignified and impressive, without being overpowering, is the tone set by Ann Hatfield Associates for the New York offices of Erwin, Wasey & Co., moving to new quarters after 30 years in an older building. For Honig-Cooper agency in San Francisco, Anshen & Allen designed the agency's own building in 1954, added two years later a new wing to accommodate expanded requirements. Structurally dramatic, and custom-tailored to the agency's needs, building and interiors alike express vitality and a lively viewpoint. Strongly suggestive of efficiency and alertness are the offices designed by G. Luss of Designs for Business, Inc. for MacManus, John & Adams, Inc., of New York. Space and furnishings, custom-planned for esthetic satisfaction together with maximum usefulness, pronounce the agency's taste and foresight.

*Quiet colors, rich woods, bland textures key the entrance to the New York offices of Erwin, Wasey & Co., designed by Ann Hatfield Associates.*

Photos: Ezra Stoller

# agency offices

| | |
|---|---|
| client | Erwin, Wasey & Co., Inc. |
| location | New York, New York |
| architects | Goldstone & Dearborn |
| interior designers | Ann Hatfield Associates |

*Brightly colored doors punctuate the office corridor* (right). *A quiet color plan of neutrals with walnut dignifies the Reception Area* (below), *seting the tone of the client's services.*

## data

**Design Theory:** With the removal of a large agency from too much space to more efficient quarters, the design problem was to avoid monotony as well as to convey to the public such specific characteristics of the organization as taste, integrity, dignity, friendliness. To offset the 1957 row-office shape, a more casual mood was established through the use of color and lighting: strong wall colors varied to shorten corridors, deliberately unrhythmical accents in doors and columns, a changing light pattern.

### reception area

**Furniture:** walnut, linseed-oil finish/ Jens Risom Design, Inc., 49 E. 53 St., New York, N. Y.

**Fabrics:** on armchairs/ teal blue/ Jack Lenor Larsen, 16 E. 55 St., New York, N. Y.; on bench/ white antique leather; on loveseat in foreground/ brown-red with black and white/ German import/ Hildreth & Dunlop, 509 Madison Ave., New York, N. Y.

**Walls:** one painted red/ one paneled in walnut/ picture-display wall with walnut trellis, smoke-colored "Strawtex"/ Guilford Leather Co., 515 Madison Ave., New York, N. Y.

**Ceiling:** acoustical tile, off-white/ U. S. Gypsum Co., 300 W. Adams St., Chicago, Ill.

**Lighting:** ceiling-recessed/ Century Lighting Co., 521 W. 43 St., New York, N. Y.

**Flooring:** gray with red-brown pattern/ Kentile, Inc., 58 Second Ave., Brooklyn, N. Y.

### corridor

**Walls:** metal-and-glass partitions/ Pioneer Fireproof Door Corp., Mount Vernon, N. Y.

**Lighting:** Century Lighting Co.

**Flooring:** Kentile, Inc.

### radio director's office

**Furniture:** walnut desk, seating units/ Herman Miller Furniture Co., Zeeland, Mich.

**Upholstery on Seating Units:** "Horsecloth" in black-beige-gray-white stripe/ Jack Lenor Larsen.

**Armchairs:** upholstered in black Transportation Cloth/ Knoll Associates, Inc., 575 Madison Ave., New York, N. Y.

**Walls:** one painted blue, one painted smoke.

**Flooring:** rust-colored carpeting/ L. Jones & Co., Inc., 19 E. 53 St., New York, N. Y.

**Ceiling, Lighting:** as in reception area.

### president's conference room

**Desk, Conference Chairs, End Tables:** walnut/ Jens Risom Design.

**Sofa, Tub Chair:** Fine Arts Furniture, Inc., 318 E. 65 St., New York, N. Y.

**Sofa Upholstery:** brown-black-beige check/ Kravet Fabrics, Inc., 50 E. 53 St., New York, N. Y.

**Lounge Chair:** Charak Furniture Co., 444 Madison Ave., New York, N. Y.

**Upholstery for Lounge and Tub Chairs:** blue-green/ Isabel Scott Fabrics Corp., 515 Madison Ave., New York, N. Y.

**Coffee-Table:** Portaro marble top/ walnut base/ The Rene Brancusi Co., Inc., 1001 First Ave. New York, N. Y.

**Bookcase-Cabinet:** designed by Ann Hatfield/ Roswell Snider, 505 E. 72 St., New York, N. Y.

**Walls:** one painted white, one brown.

**Flooring:** custom-woven carpet, blue-green/ Walter Company, 55 E. 55 St., New York, N. Y.

**Lamps:** star-studded natural wood, grass-cloth shades/ The Newel-Hayes Co., 714 Lexington Ave., New York, N. Y.

**Ceiling, Lighting:** as in reception area.

*In the Radio Director's Office,* (right), *the rust-colored carpeting is a rich foil for one blue wall, one smoke-colored. Blue-greens predominate in the President's Conference Room,* (below) *against one white and one brown wall.*

# agency offices

| | |
|---|---|
| client | Honig-Cooper Company |
| location | San Francisco, California |
| architects | Anshen & Allen |
| landscape architect | Thomas Church |

*Handsomely landscaped patio forms a "fourth wall" for the two working wings that face it, as well as for the entrance lobby from which it opens. Structure, fenestration, and lighting are organized on a three-foot module, allowing great flexibility of office rearrangement. Interior furnishings in top executive offices were individually selected by occupants, thus creating diversity of color, fabrics, and furniture against unified backgrounds.* Photos: Cal-Pictures

## data

**Design Theory:** Rapid expansion demanded the addition of a three-story wing to increase staff facilities for an advertising agency's building erected two years earlier. New wing includes 15 offices, executive suite, conference room, film-editing laboratory, stenographic department. Centered around a landscaped patio, the interior decor is chiefly "view," redwood, glass, steel, aluminum, white enamel.

**Color Plan:** devised by the agency's art department, it introduces yellow and green in corridors, natural wood stains on mahogany, and natural redwood.

### cabinetwork

**All:** natural-finished Japanese ash/ Emanuel Manufacturing Co., 1485 Bayshore Blvd., San Francisco, Calif.

### doors, windows

**Doors:** Philippine mahogany slab/ Pacific Manufacturing Co., Santa Clara, Calif.

**Windows:** steel casement/ "Fenestra"/ Detroit Steel Products Co., Oakland, Calif.

**Blinds:** "Flexalum"/ Hunter Douglas Aluminum Corp., Riverside, Calif.

### furniture

**Desks, Chairs:** Herman Miller Furniture Co., Zeeland, Mich.

**Cabinets:** Steelcase Co., Grand Rapids, Mich.

### lighting

**Fixtures:** incandescent with silver-bowl lamps, "Skylite," surface-mounted/ Smoot-Holman Co., Inglewood, Calif.

### walls, ceiling, flooring

**Office Walls:** Philippine mahogany, stained/ Samuel Cabot Inc., 141 Milk St., Boston 9, Mass.

**Corridor Walls:** gypsum board/ Kaiser Gypsum Co., Oakland, Calif.; painted/ "Dutch Boy"/ National Lead Co., 111 Broadway, New York, N. Y.

**Lobby Walls:** redwood vertical siding.

**Ceiling:** structural wood planks, exposed beams; acoustical tile/ Armstrong Cork Co., Lancaster, Pa.

**Flooring:** cork tile/ Armstrong Cork Co.; "Terrelast" vinyl-tile, brass-stripped/ Vinyl Plastics Co., 1825 Erie Ave., Sheboygan, Wis.

### patio

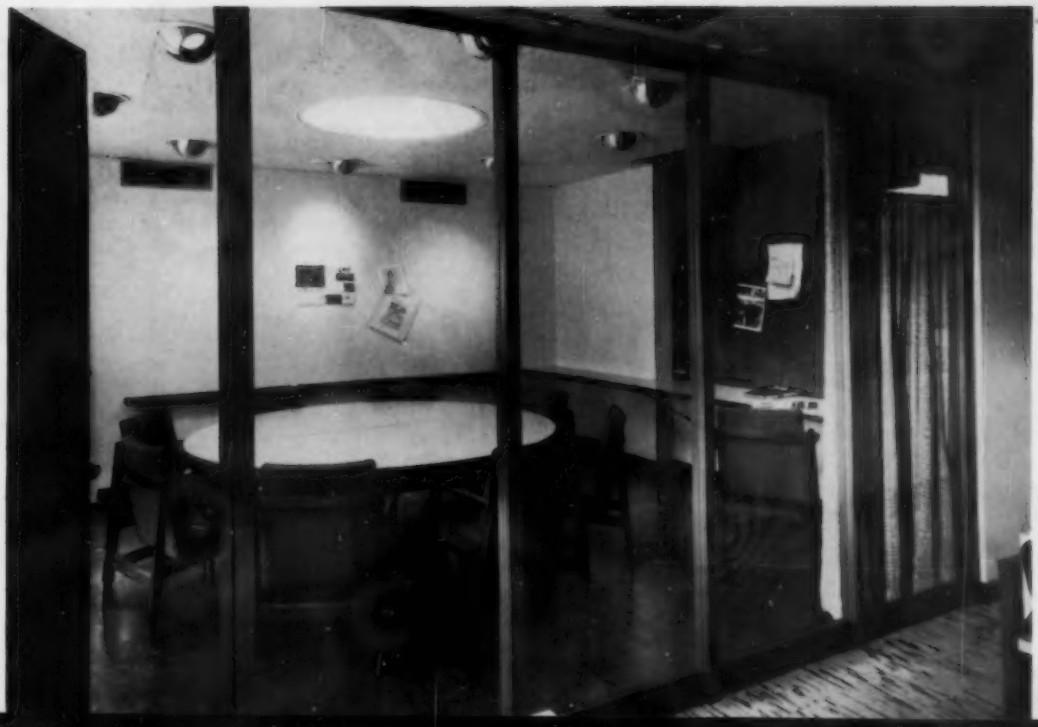
**Paving:** broom-finish concrete slabs.

# agency offices

*Comfort and simplicity keynote Reception Room* (above); *with luminous ceiling, white walls, and black-and-white marbleized flooring establishing the mood. Unadorned walls avoid any distraction from identifying nameplate. Executive Corridor* (left) *houses secretaries in a plan of maximum space utilization without sacrifice of attractive appearance or working comfort. Desks are varicolored, lighting is warm and bright.* Photos: Ben Schnall

| | |
|---|---|
| client | MacManus, John & Adams, Inc. |
| location | New York, New York |
| designers | Designs for Business, Inc. |
| design director | G. Luss |

*Office of the president* (above and right) *is deliberately over-scaled to provide both working and conference areas, separable by folding door on ceiling track. Custom-designed work and conference tables, walnut furniture, beige carpeting and curtains, refreshment and storage facilities concealed by slatted doors. Conference Room* (below) *is an interior space with outside effect achieved by use of clear glass to form an entire wall open from corridor.*



## data

**Design Theory:** To accommodate presently an extremely high ratio of personnel to the square footage of a cut-up floor space, and at the same time allow for future expansion, this agency's offices were planned with a system of acoustically treated steel and glass partitions, permanent in appearance yet completely flexible.

**Color Plan:** Predominantly white, sand, and tones of brown, with vivid planes of primary colors used architecturally to expand dimensions and create the illusion of depth and breadth.

### cabinetwork, furniture

**All:** designed by G. Luss/ Ezra Blank Associates, 117 Lombardy St., Brooklyn, N. Y.; Lehigh Furniture Corporation, 16 E. 53 St., New York, N. Y.

**Modular Cabinet Units:** steel modules/ Globe-Wernicke Co., 220 E. 42 St., New York, N. Y.; custom Formica tops, set on custom walnut benches/ designed by G. Luss/ Ezra Blank Associates.

### partitions

**All:** "Perspec"/ custom inserts of cork and wood/ E. J. Boyle, Div. of Aetna Steel Products Corp., 14 Charlton St., New York 14, N. Y.

### fabrics

**Drapery, Upholstery:** Isabel Scott Fabrics Corp., 515 Madison Ave., New York, N. Y.

### lighting

**Installed:** Lightolier, Inc., Jersey City, N. J.

**Luminous Ceiling:** DeCew & DeCew, 550 Fifth Ave., New York, N. Y.

### walls, ceiling, flooring

**Reception Lobby Wall:** vinyl/ Johanne Western Mills Co., 22 & Jefferson Sts., Chicago, Ill.

**Ceilings:** "Stria"/ Fiberglas Corp., 16 E. 56 St., New York, N. Y.

**Reception, Corridor Floors:** vinyl-asbestos/ Armstrong Cork Co., Lancaster, Pa.

**Sales Office, Conference Room Floors:** "Kencork"/ Kentile, Inc., 58 Second Ave., Brooklyn 15, N. Y.

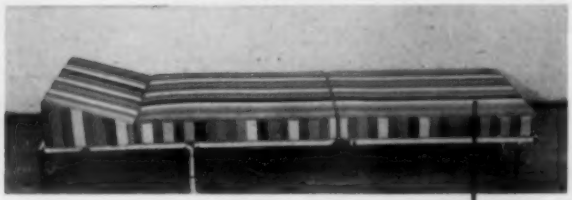
**Executive Office Carpet:** V'Soske, Inc., 4 E. 53 St., New York, N. Y.

# p/a interior design products

**Multipurpose Cabinet:** one of four variations, this provides pull-out dictation slide, horizontal and vertical storage, a small drawer/ other versions include removable wastebasket, vertical telephone panel/ in walnut or birch/ brass or wood legs, or brass casters/ 27"x21"x26¼"/ **retail:** $246/ **Jens Risom Design, Inc., 49 E. 53 St., New York, N. Y.**

**Magazine Table:** walnut with hand-rubbed oil finish/ turned tapered legs, shaped wood stretchers, inclined magazine shelves with shaped wood edge molding/ 36" diam., 15½" high/ **retail:** $160/ **Design Previews, Inc., 500 Madison Ave., New York 22, N. Y.**

**"Variations":** component units provide seating, storage, surfaces/ units include sectional sofas, cabinets, drawers, shelves/ all walnut/ designed by Martin Borenstein/ **retail:** $255, 96" long, 24" deep as shown/ **Brown-Saltman of California, 2570 Tweedy Blvd., South Gate, Calif.**



**Sleep Chair:** three-position seating, lounging, sleeping unit/ tightly woven wicker over metal frame, hinged/ 4" foam-rubber cushions/ open, 9½" high, 80" long, 25" wide; closed, 30" high, 34" deep, 25" wide/ **retail:** $295, plus 6 yd fabric/ **Karl Mann Associates, 16 E. 55 St., New York 22, N. Y.**

**Danish Furniture:** drop-leaf table, oval, with picture-frame base that opens out to support leaves/ of solid Bangkok teak, hand-rubbed oil finish/ 64"x18"x28½" with 20" extension leaves/ **retail:** $220; armchair of Bangkok teak, curved arm-rests, semicircular backrest with curved ledge, shadow pattern stretchers/ sea grass seat woven in quarter section/ **retail:** $72; matching side chair/ **retail:** $52/ **John Stuart, Inc., Fourth Ave. & 32 St., New York, N. Y.**

# THE LEHIGH REVOLVING CLOSET

Designed by von der Lancken and Lundquist

Provides ample space for six coats as well as storage area for hats and overshoes.
Adds closet space without structural changes.
Less costly than typical closet installation and requires no more floor space.
Installs easily wall-to-ceiling or on any wall, or corner by means of adjustable hinged brackets.
5'6" x 2'0" diameter. Available in walnut with
hand-rubbed linseed oil finish, and handsome satin chrome fittings.

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**LEHIGH FURNITURE CORPORATION,** 16 EAST 53RD STREET, NEW YORK 22, N. Y.

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*a popular choice for all types of buildings*

**FRANK ADAM**

CORAL SEA TOWERS, Miami Beach's newest Cooperative Apartment Building.

BETTES BUILDING, Oklahoma City, winner of PROGRESSIVE ARCHITECTURE'S design award.

CHRYSLER MOTOR'S East Jefferson Plant, Detroit, Mich.

HENRY AND EDSEL FORD AUDITORIUM, Detroit. Mich.

CHURCH OF TOMORROW, the First Christian Church of Oklahoma City.

# EQUIPMENT

The latest additions to the steadily mounting list of structures—industrial, commercial, institutional and residential—in which equipment designed and produced by Frank Adam Electric Company for the control and distribution of power and light has been installed, are shown on the opposite page.

The designers and builders of these outstanding structures, like so many others in other parts of the country, found, after a careful study that Frank Adam equipment was ideally suited to the needs of these buildings—that products bearing the trade mark FA were modern in design, rugged in construction, require less maintenance and give safe, dependable, long-lasting and trouble-free service.

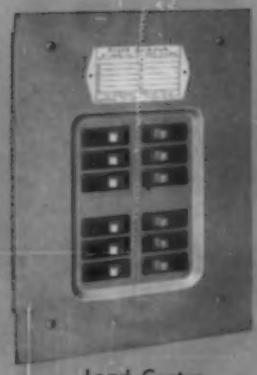
Be sure the next building you design includes the finest equipment for the control and distribution of power and light. Specify Frank Adam electrical products.

For further information about all Frank Adam products, contact your nearest FA representative listed in Sweets or your nearest FA distributor.

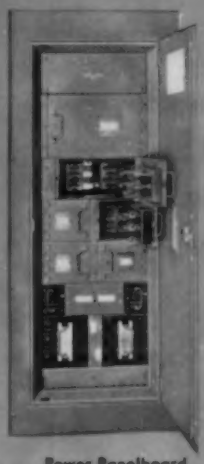
Powerplugin

Lighting Panelboard

Shutlbrak Switch



Load Center



Power Panelboard

Circuit Breaker Switchboard

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# AMERICAN MODERN at its best in architecture...in door closers

A continuing series of outstanding office buildings, churches, schools, hospitals and industrial structures using NORTON DOOR CLOSERS

**Offices of Champlin Oil & Refining Co....Fort Worth, Texas**

Serving as headquarters for a chain of operations that extends from the Gulf of Mexico to the Canadian Border, the structure above is considered to be one of the most modern buildings in the Southwest. Genuinely modern it is, too, not only in appearance but in every detail right down to the door closers...a Norton Inador Closer on every interior door.

The compact, powerful INADOR mechanism is fully concealed in a mortise in the top rail of each door so there is no conflict with the architect's design. Their mechanism, moreover, is of the rack and pinion structure designed and built to provide the same rugged dependability that has kept so many Norton Door Closers in continuous, trouble-free service for periods up to 30 years and more.

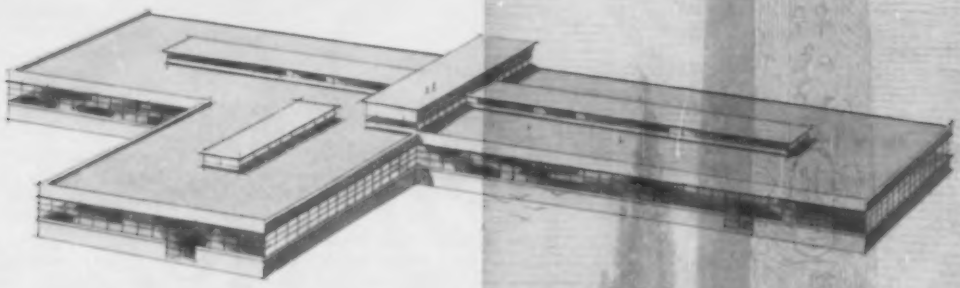
For complete information about these and other Norton models, consult the current NORTON catalog. Write for a copy today if you don't already have one.

A complete line of Norton Surface-type Closers is available for installations where concealment is not essential.

**NORTON**
**DOOR CLOSERS**
Dept. PA-97 • Berrien Springs, Michigan

# ENDURING

A Fiberglas* Built-Up Roof embodies the construction principle of *enduring*, rot-proof materials.

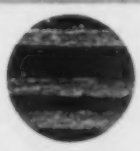


This great new advance in built-up roofing makes the layered, bulky construction of old-fashioned rag-and-paper felts a thing of the past. Light, inorganic fibers of glass in Fiberglas Built-Up Roofing won't rot, won't wick-out essential bitumen oils—roofs resist drying out and cracking. And the bitumen is permanently reinforced—in a single monolithic sheath—by the same super-strong, *enduring* glass fibers used in Fiberglas-reinforced fishing rods and boat hulls.

Because Fiberglas Built-Up Roofing is reinforced this new way, the entire thickness of the built-up structure acts to resist the ravages of weather. Proved in use for many years, Fiberglas materials can outlast the bitumen itself! Under any weather conditions, Owens-Corning will bond your roof for up to 20 years! And with Fiberglas Roof Insulation under a Fiberglas Built-Up Roof, you have a quality roof from top to bottom. *It's amazing the* difference *Fiberglas makes!*

**SEND FOR FREE SPECIFICATION BOOK**—*Reinforced Built-Up Roofs*—containing technical and design data later than current *Sweet's Files*. Address Owens-Corning Fiberglas Corp., Dept. 63-I, Toledo 1, Ohio, or Santa Clara, Calif.

OWENS-CORNING
FIBERGLAS



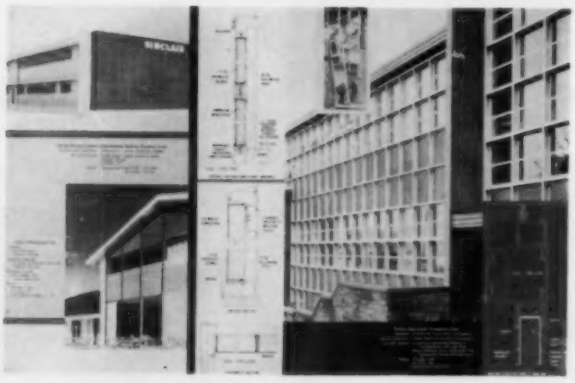
**Ordinary** roofing felts *separate* bitumen layers — voids between layers may result in premature failure.

**Fiberglas** roofing *bonds* bitumen applications together—creates a single reinforced monolithic roof.

*T.M. (Reg. U.S. Pat. Off.) O-C. F. Corp.

**Roofing Products**—FIBERGLAS PERMA-PLY* • FIBERGLAS BASE SHEET FIBERGLAS COMBINATION SHEET • FIBERGLAS ROOF INSULATION • FIBERGLAS FORM BOARD • FIBERGLAS MOP YARN • FIBERGLAS COROTOP* (Cold-application roof resurfacing)

# p/a manufacturers' literature



*A recently released booklet*—Design Manual, Part Two, Porcelain Enamel in Architecture, Curtain-Wall Construction—*has been prepared by the Porcelain Enamel Institute to illustrate special properties of porcelain enamel in curtain-wall construction and to provide design data.*

*Advantages of porcelain-enamel curtain-wall construction are detailed with emphasis placed upon permanence of colors, resistance to weather, easy maintenance, and variety of finishes available.*

*Design data for panel manufacture, assembly, and erection is featured, and properties of porcelain enamel are outlined. To illustrate the use of porcelain-enamel curtain-wall construction, the manual includes numerous photos with inserted details of completed buildings.*

*Copies of* Design Manual, Part Two, Porcelain Enamel in Architecture, Curtain-Wall Construction *may be obtained from the Porcelain Enamel Institute, 1145 19 St., N.W., Washington 6, D. C.*

E.C.D.

*Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

## air and temperature control

**126. Anemostat Draftless Aspirating Air Diffusers,** AIA 30-J. 78-p. manual discussing selection of conventional air diffusers, 100% air-induction diffusers, and all-air high-velocity units. Special section giving definitions of air distribution terms and static pressure factors. Specification and performance data. Photos and charts. Anemostat Corporation of America, 10 E. 39 St., New York 16, N. Y.

**127. "Satisfabricated" Governair Self Contained Air Conditioners,** AIA 30-F-2, 24-p. manual containing descriptive material on complete packaged air conditioners in sizes from 7½ to 60 tons. Base model fully described by photos and data. Accessories, specifications, capacities, dimensions, drawings supplied. Governair Corporation, 4840 North Sewell, Oklahoma City, Okla.

**128. Heat Chaser,** 4-p. brochure describing combination water and air cooling unit. Soaker coil provides simultaneous triple heat exchange. No cooling tower required. Available in 2- to 5-ton models. Easily installed in either residential or commercial buildings. Dimensions and specifications. Harvey Hill, Inc., 6552 Clayton Rd., St. Louis 17, Mo.

## construction

**226. Fireplaces of Stone,** AIA 22-A-2, 22-p. publication showing examples of stone fireplaces for homes selected by Building Stone Institute. Photos indicate wide range of stone types used in fireplaces designed for contemporary or traditional surroundings. Building Stone Institute, 420 Lexington Ave., New York, N. Y.

**227. Glass for Construction,** AIA 26-A, 28-p. booklet providing data on special glass types for architectural applications. Covers tempered plate glass windows and doors, shatterproof glass, insulating glass, transparent mirrors; also patterned, frosted, heat-absorbing, and wire glass. Describes physical properties; suggests installation methods. Gives chart of standard sizes and designs in plate glass windows; table of dimensions and varied patterns in obscure glass. Photos, drawings, specifications. Libbey-Owens-Ford Glass Co., Toledo 3, Ohio.

★ **228. Fenestrawall,** AIA 17A, 12-p. booklet providing drawings and details for installation of single- and multi-story window walls with porcelain-enamel panels. Photos show several completed installations. Gives specifications for panels, windows, auxiliary materials, and erection. Fenestra Inc., 2250 East Grand Blvd., Detroit 11, Mich.

**229. Aluminum in School Construction,** 64-p. publication designed to suggest to architects, by illustration, numerous applications for aluminum in school buildings. Photos show aluminum material employed for walls, windows, roofing, doors, lighting, piping, storage units, chairs, and tableware. Discusses economic factors affecting school construction and trends in recent school design affecting structural concepts. Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.

★ **230. Carthage Marble,** 52-p. oversize brochure is handsome photographic presentation showing past and present uses of marble. Stresses esthetic effects of monumental marble building and sculpture of past. Illustrates phases of present-day marble production from quarry to installation as exterior facing, flagging, flooring, fireplace trim, interior surfacing, tabletops, toilet compartments, and column covering. Describes physical characteristics of marble and development of marble industry. Limited number of copies available; write directly to: Carthage Marble Corp., Box N612-PA, Carthage, Mo.

**231. Granite in the School, 12-p.**
**232. Granite in the Hospital, 12-p.**
**233. Granite in Places of Worship, 12-p.** Three brochures, illustrated with sketches by AIA members, explore structural and ornamental characteristics of granite as used in particular building types: school, hospital, or church. Presents original design ideas to stimulate imaginative use of materials for benches, play sculpture, pools, memorials, carved panels, steps, columns, table tops. Data on costs, colors, properties, sizes, finishes. Cold Spring Granite Co., Cold Spring, Minn.

**234. Open-Web Steel Joists,** AIA 13G, 24-p. publication containing basic data on open-web steel joists in both shortspan and longspan series. Provides perspective drawings and photo details showing anchorage methods, bridging, connections, and centering as well as installation of pipes and ducts. Illustrates series of longspan-joist designs: underslung- and square-end; parallel chords; single- and double-pitched top chords. Code of Standard Practice, specifications, loading tables. Steel Joist Institute, Dupont Circle Bldg., 1346 Connecticut Ave., N. W., Washington 6, D. C.

**235. Spectra-Glaze,** AIA 10-B, 8-p. booklet giving data obout glazed, structural, masonry units. Glazing material—combination of thermo-setting resinous binder and glass silica sand with pigments—is cast on modular concrete blocks in individual molds. Three groups of permanent colors available — solid, colored ceramic chips on white background, and colored chips on colored background. Resistant to chemical action and abrasion. Standard shapes, dimensions, and construction details given.

The Burns and Russell Co., Bayard & Severn Sts., Baltimore 30, Md.

### doors and windows

**316. American Lustragray Sheet Glass,** 8-p. brochure concerning neutral gray-tint sheet glass for large glass areas. Charts show reduction of light transmission for three thicknesses. Solar energy properties and transmission also stated. Specifications. American Window Glass Company, Farmers Bank Bldg., Pittsburgh 22, Pa.

**317. 1¾" Hollow-Metal Door Units,** AIA 16A, 28-p. manual indicating types of doors, frames, and hardware available. Flush, entrance, Underwriters' B Label flush and panel, and full-louvered doors detailed. Other contents include selection tables, installation details, hardware and accessory sections, and specifications. Fenestra, Inc., 2250 E. Grand Blvd., Detroit 11, Mich.

**318. Thru-Vu Vertical Blinds,** 4-p. catalog describing blinds for big windows. Features include 6" spacing between vanes, self-lubricating nylon carriers, plastic van holders, 7" wide vinyl-coated vanes, removable vanes for cleaning. Available in three basic types: standard traverse, bottom track, draw-bar; also special types for gang operation, sloping ceiling. Details and specifications. Thru-Vu Vertical Blind Corp., Box 266, Rye, N. Y.

### electrical equipment, lighting

**407. Smithcraft Twosome,** 4-p.
**408. Smithcraft Executive,** 4-p.
**409. Smithcraft Civic,** 4-p.
New brochures introduce three new fluorescent fixture designs. First brochure describes fixture which features 45° x 45° compound shielding in shallow unit with no dark center streak; second introduces extra-wide all-steel louvered shallow unit with self-illuminated sides; third features extruded-aluminum framed luminaire, shielded with patterned glass or acrylic plastic. Photos, technical data, dimensions, mounting and maintenance instructions, specifications. Smithcraft Lighting, Chelsea 50, Mass.

**410. Lightolier Style Book,** 98-p. catalog showing hundreds of fixture styles for commercial or residential applications. Includes recessed, pendent, ceiling-mounted, floor, and wall-mounted models to complement traditional or contemporary room decor. Sketches show fixtures installed in exterior and interior settings where such factors as sloping ceilings, exposed beams, multipurpose rooms, and furniture create unusual lighting problems. Covers fluorescent, incandescent, and strip lighting. Cross-reference chart serves as convenient guide to choice of proper fixture for specific lighting situation. Lightolier, Inc., Jersey City 5, N. J.

**411. Kappa-Lights,** 4-p. catalog sheet and price list featuring line of modular pendent-supported lamphousings in decorative geometric forms. Illustrations suggest unusual custom-design arrangements including light screen or room divider, ornamental tree of light, and slung lights. Also shows decorative shapes for use without lights. Data on dimensions, finishes. Kappa-Light Co., 75 Spring St., New York 12, N. Y.

**412. Recessed Lighting,** AIA 31-F-2, 28-p. catalog of prewired recessed lighting fixtures for commercial and residential applications. Points out features of units with rectangular housing and down-swinging metal-trimmed glass shield. Drawings illustrate components as well as assemblies of fluorescent and incandescent units. Also covers downlights, rotating eyeball-and-baffle units, strip lighting, and adjustable accent lights. Technical data, dimensions. Moe Light Div. of Thomas Industries, Inc., Louisville, Ky.

### finishes and protectors

**527. Silicone Masonry Water Repellents,** 4-p.
**528. Silicones,** 8-p
Two pamphlets describing various applications for silicone products. First brochure deals with durable silicone water repellent for masonry. Discusses advantages; lists properties. Photos show comparative test results using silicone-treated and untreated masonry soaked in water. Specifications. Second booklet lists typical uses, benefits, and technical characteristics of silicone products. Includes adhesives, damping fluids, electrical insulations, glass-surface coatings, polishes, paints, and rubber products. Charts, photos. General Electric Co., Silicone Products Dept., Waterford, N. Y.

**529. Now Wood Gets a "Vaccine," Too!** AIA 19E-9, 4-p. booklet describing the application of preservative to wood by use of controlled vacuum. Process, called Dri-Vac, prevents decay, stain, termite attack, warping, and retards moisture absorption. Preservative used is Woodlife; contains pentachlorephenol, water-repellent solids, and other chemicals. Effectiveness illustrated by photos and other data. Robbins Flooring Co., Reed City, Mich.

**530. SonNoMar,** AIA 3-B-1, 25-B-26, 4-p. catalog describing protective finish for concrete floors. Contains synthetic resins and elastic plasticizing agents to protect concrete floor against heavy wear, oils, or chemicals. Dries quickly and is easy to keep clean. Finish, available in several colors, is useful in most industrial plants. Table notes resistance to various oils, solvents, and chemicals. L. Sonneborn Sons, Inc., 404 Fourth Ave., New York 16, N. Y.

**531. Epoxy Paints Have Wider Applications . . . Longer Life . . . With Thiokol Liquid Polymer,** 2-p. leaflet describing properties of epoxy paint modified with liquid polymers. Advantages of process include resistance to water, oil, chemicals; adhesion to wood, metals, concrete; impact resistance. Applied with conventional spray equipment; air-drying. Sample coated metal strip is enclosed. Useful in industrial. maintenance, marine, and railroad applications. Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7, N. J.

**532. Glasfab Torch Tape,** 4-p. leaflet describing moisture and corrosion protective tape. Tape made from loom-woven open-mesh glass cloth filled to a thickness of 60 mils with plasticized coal-tar pitch. Type of waterproofing is useful for spandrels, flashings, roof drains. Tape is resistant to abrasion and chemical fumes. Installation described; examples of uses cited. Twinsburg-Miller Corp., P. O. Box 207, Twinsburg, Ohio.

### insulation (thermal and acoustical)

**651. Baldwin-Hill Perimsul,** AIA 37-B-3, 4-p. bulletin describes perimeter insulation which is felted from spun mineral wool fibers; lists properties and uses. Five methods of application are illustrated and statement of testing results are included. Use of insulating material under concrete

(Continued on page 178)

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PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y.

I should like a copy of each piece of Manufacturers' Literature circled. We request students to send their inquiries directly to the manufacturers.

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| 126 | 233 | 411 | 743 | 964 |
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| 227 | 317 | 529 | 878 | |
| 228 | 318 | 530 | 879 | |
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| 231 | 409 | 651 | 882 | |
| 232 | 410 | 742 | 883 | |

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# Robbins Floor Products

# OPERATION COLOR

## NOW IT CAN BE TOLD!

For over two years Robbins has been auditing colors in a vast program of color research. This master plan has been a well-kept secret. It was directed by New York's foremost color consultants, Colorhelm, Inc., and American Color Trends, Inc., whose experts broke down the spectrum as never before. They lived color, analyzed color from every aspect of modern life, directed running of thousands of experimental samples, plotted color trends far into the future.

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A completely re-styled
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We call these new colors

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CAREER COLORS strike a psychological balance in color preferences. They were selected and created with contemporary paints, wallpapers, fabrics, fixtures and furniture in mind. Wider color range than ever before . . . yet simpler and easier to handle . . . faster shipment from the factory . . . better stocking at the distributors . . . Career Colors are statistically *proved* by professional color analysts.

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# COLOR!

**the boldest step in floor tile programs ever taken!**

**Robbins re-styles all lines in color!**

**ARCHITECTS:** WRITE FOR YOUR COMPLETE FILE OF CAREER COLORS! NOW READY!

fabulous floors by

Robbins
FLOOR PRODUCTS, INC.
Tuscumbia, Alabama

# p/a manufacturers' literature

(Continued from page 174)

floor and in crawl space is stressed. Baldwin-Hill Co., 500 Breunig Ave., Trenton 2, N. J.

### sanitation, plumbing

**742. Electronic Control Center,** 8-p. brochure discussing functions, features, and advantages of centralized automatic control for visual supervision of entire heating and air-conditioning system. Illustrates panelboard components in full color and describes each in detail. Chart shows standard symbols used in schematic illustrations on panelboards. Specifications. Barber-Colman Co., Rockford, Ill.

**743. Rolling Gymstands,** AIA 35-F-11, 16-p. catalog illustrates operating features of four rolling gymstand types: standard, recessed, movable, and special balcony models. Shows typical installations. Section on optional accessories: end rails and panels, rear filler boards, scorer's table, ventilating grills. Tabulated space requirements, seating capacities; diagrams; slightline study; planning procedure; typical gym floor-plans showing location of stands. Specifications. Wayne Iron Works, 147 N. Pembroke Ave., Wayne, Pa.

**744. Corning Brand PVC Pipe and Fittings,** 12-p, description of piping material for mildly corrosive applications. Pipe and fittings, made of unplasticized polyvinyl chloride, are lightweight and mechanically strong. Contains table of chemical resistance. Plumbing and installation discussed. Dimensions for pipe and fittings illustrated, as well as for values of same material. Corning Glass Works, Corning, N. Y.

**745. Ingersoll-Humphryes Plumbing Fixtures,** AIA 29-H, 52-p. catalog features fixtures of enambled cast iron, porcelain on steel, and vitreous china. Each product is identified with photo and drawings. Specifications are included. Color section shows available colors for fixtures. Presentation of production and control operation is featured. Ingersoll-Humphryes Div., Borg-Warner Corp., Mansfield, Ohio.

### specialized equipment

**877. Draft-a-Matic,** 8-p. pamphlet illustrates operating characteristics of adjustable drafting table with flexible rolling-belt surface that permits draftsman to remain seated while working on any part of the drawing. Drawings show four available table models with drawers, reference shelf, and storage area. Suggests alternate desk arrangements for drafting room. General Fireproofing, Youngstown 1, Ohio.

**878. Boosey Swimming Pool Fittings,** 8-p. catalog of drain trench gratings and auxiliary fittings for water-level deck swimming pools, provides drawings, descriptions, and data on materials and finishes. Drawings show grating patterns, shapes, dimensions, and sections. Specifications. Norman Boosey Mfg. Co., P. O. Box H, Detroit 8, Mich.

**879. 1957 Revco,** information kit containing latest data on built-in refrigerators and freezers for contemporary and traditional kitchens. Includes: complete specifications, installation instructions, catalog brochure, and 16-page brochure of selected kitchen designs featuring four-color photos and perspective drawings of each. Revco, Inc., Deerfield, Mich.

**880. Vibrechord Chimes,** 16-p. pocket-size pamphlet providing series of two- and three-signal wiring diagrams for six paging and alarm systems used in any building type. Includes automatic chimes set off by door-opening or temperature rise and push-button type for signaling family members or nurses at will. Edwards Co., Inc., Norwalk, Conn.

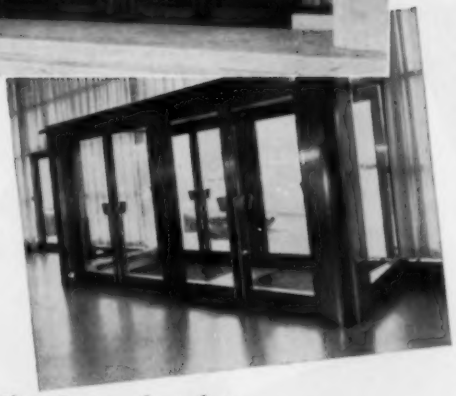
**881. ABC of Fire Protection,** 36-p. two-color bulletin describes nature of fire protection systems. Various types of fire protection systems and components available ilustrated in detail. Methods of ex-

(Continued on page 182)


National Headquarters Building
INTERNATIONAL BROTHERHOOD of TEAMSTERS
Washington, D. C.
ARCHITECT:
Holabird & Root & Burgee

more....
Ellison
doors

8 Balanced Doors in the entrances to National Headquarters Bldg. INTERNATIONAL BROTHERHOOD of TEAMSTERS.

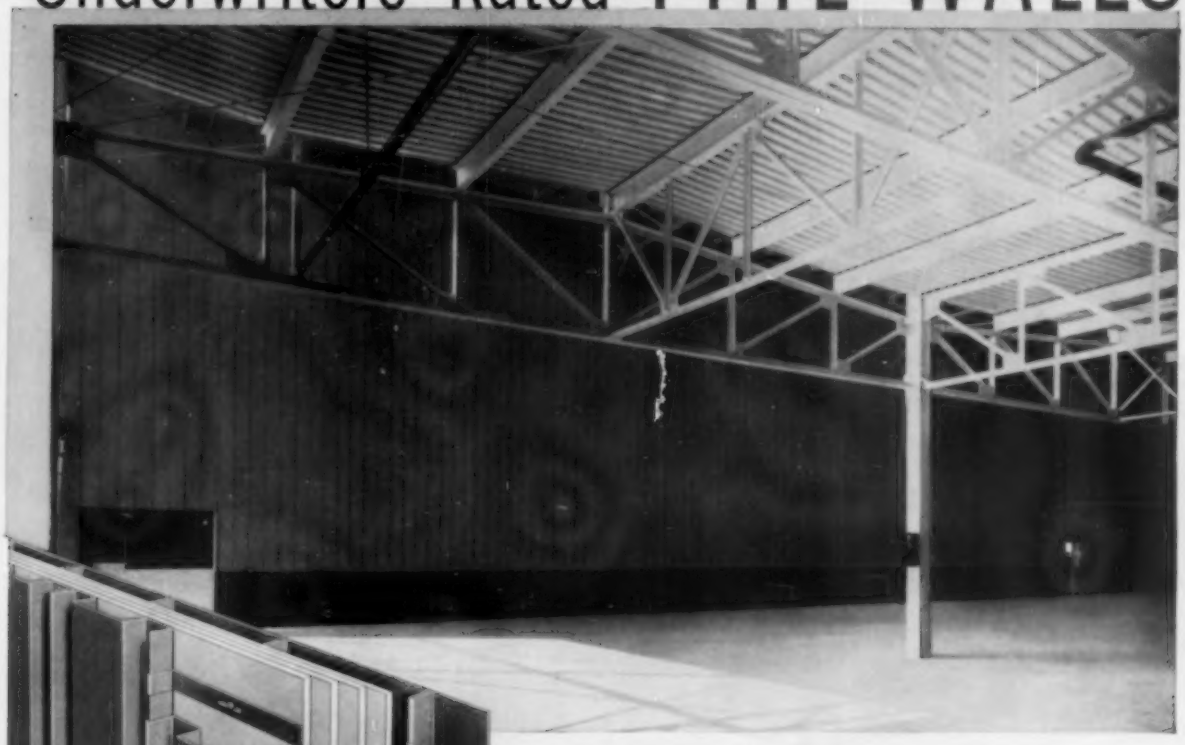


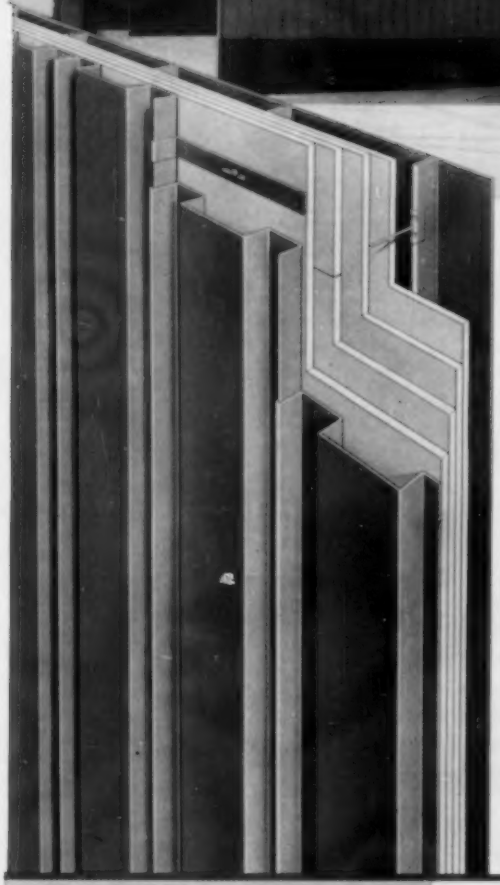
The Door that lets
TRAFFIC through QUICKLY

Ellison
ELLISON BRONZE CO.
Jamestown, New York
representatives in 77 principal cities in the United States, Canada and Puerto Rico

the BALANCED DOOR

# Underwriters' Rated FIRE WALLS





## . . . for Interior or Exterior Use!

Mahon Underwriters' Rated Metalclad Fire Walls are now available for use as interior dividing fire walls or as exterior curtain-type fire walls. They can be installed in old or new buildings, of either steel or reinforced concrete construction, where a fire hazard may exist, or where the requirements of Fire Insurance Underwriters or Building Codes must be met. The Mahon Metalclad Fire Wall is field constructed. It has been tested by the Underwriters' Laboratories, Inc., and has been given a Two-Hour Rating for use as either an interior or exterior fire wall. When employed as an exterior wall, Fiberglas insulation can be inserted between the interlocking ribs of the inner wall plates, thus providing insulating properties superior to that of a conventional masonry wall with furred lath and plaster. Exterior Wall Plates may be Aluminum, Stainless Steel or Enamel Coated Cold Rolled Steel. The important feature of the Mahon Fire Wall is the Impaling Clip with its Stainless Steel Spike (Patents Pending) which permits construction of the wall with only .0048 sq. in. of through-metal per sq. ft. of wall area. Mahon engineers will cooperate fully in supplying information and assistance in adapting this product to your particular requirement.

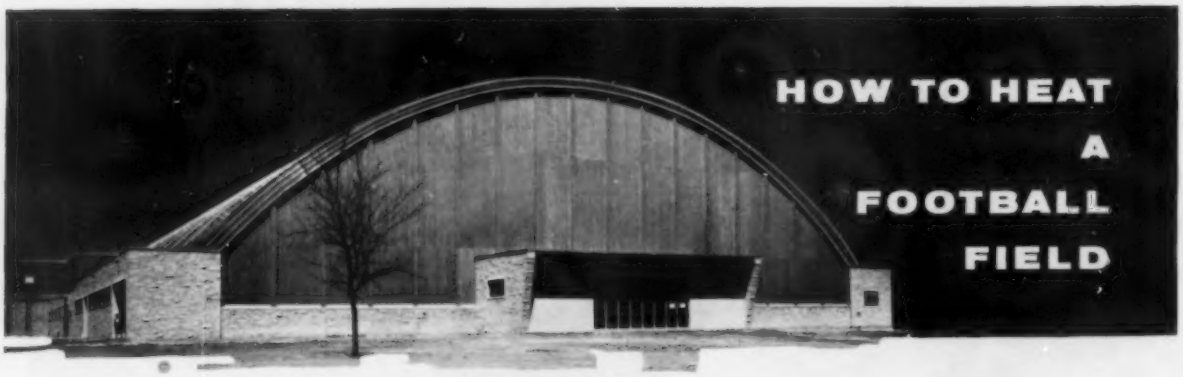
**THE R. C. MAHON COMPANY • Detroit 34, Michigan**

Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Underwriters' Rated Metalclad Fire Walls; Insulated Metal Curtain Walls; Steel Roof Deck and Long Span M-Decks; Acoustical and Troffer Forms; Electrified M-Floors; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters.

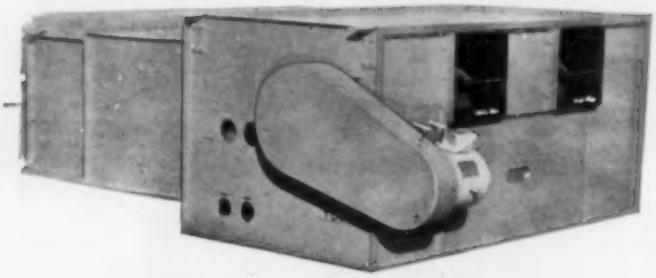
Section of Mahon Metalclad Fire Wall showing Construction Features. Four layers of ½" Plaster Board are sandwiched between Roll-Formed Steel Wall Plates. All Joints in both Wall Plates and Plaster Board are Offset.

# MAHON



# HOW TO HEAT A FOOTBALL FIELD

**UNIVERSITY BUILDING HOUSES**
**FULL-SIZE FOOTBALL FIELD PLUS**
**TRACK PERIMETER AND BASEBALL DIAMOND**

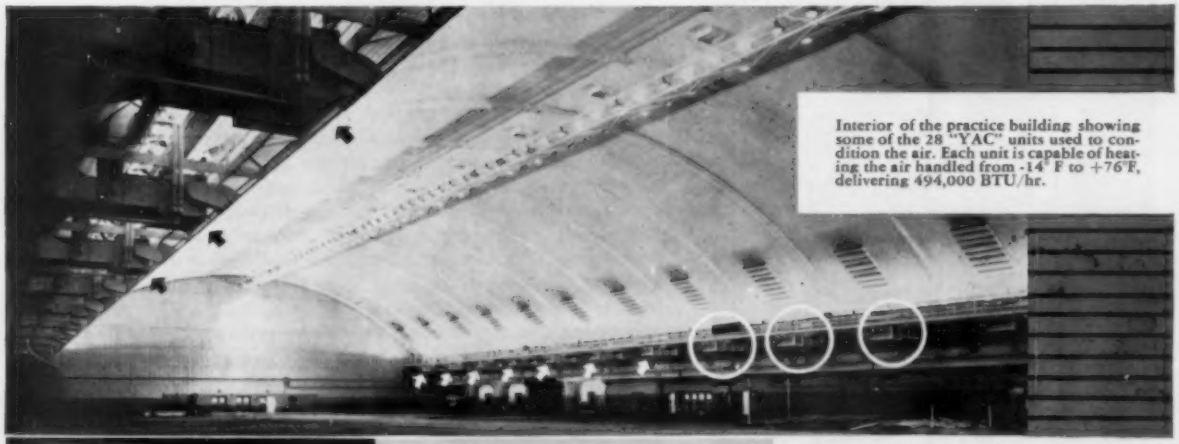


Architect: Scott, Kloppenburg & Scott, Milwaukee
Engineer: Ammann & Whitney, New York
Gen. Cont.: J. L. Simmons Co., Chicago
Mech. Cont.: C. A. Hooper Co., Madison

## Young does it with 28 "YAC" UNITS

At a leading Midwestern university, the practice building employs Young "YAC" units for heating and ventilation.

Easy to select, easy to install, simple to service and quiet in operation, Young "YAC" units are available in nine sizes and in horizontal and vertical types. They may be used to furnish any combination of heating, cooling, dehumidifying, ventilation and filtering.

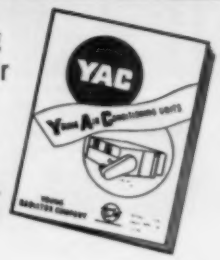


Interior of the practice building showing some of the 28 "YAC" units used to condition the air. Each unit is capable of heating the air handled from -14° F to +76°F, delivering 494,000 BTU/hr.

**Young RADIATOR COMPANY**
RACINE, WISCONSIN
*Creative* HEAT TRANSFER ENGINEERS
*Executive Office: Racine, Wisconsin, Plants at Racine, Wisconsin, Mattoon, Illinois*

solving heating problems is our business . . .

Whatever your heating or cooling problem may be, let our experience provide the solution. Call or write Dept. 247-J for Catalog No. 7554-A.



ARCHITECT ACHIEVED DISTINGUISHED EFFECT BY USING SPECIAL MULLIONS AND BAND COURSES IN THIS

# ALUMINUM CURTAIN WALL BY CUPPLES

400 PARK AVENUE, New York City
Emery Roth & Sons, Architects
Fisher Brothers, Owners-Builders

This 20-story luxury office building is enclosed in a distinctive curtain wall, fabricated and erected by Cupples. Vertical mullions, in alumilite finish, are only 3 inches wide and project a mere 1¾ inches from the face of the building. A 12-inch horizontal aluminum band accentuates each floor level. Double-weatherstripped projected windows, also by Cupples, can be cleaned from the inside. Spandrels are structural glass.

This is another example of how Cupples' aluminum curtain walls can be adapted to fit the requirements of any structure, regardless of size. And it is further proof of Cupples' leadership in sound, economical skin construction. Cupples is also a foremost manufacturer of aluminum windows, doors, Alumi-Coustic grid systems and special ornamental products. Our catalogs are filed in Sweet's.

Cupples PRODUCTS CORPORATION
2660 South Hanley Road • St. Louis 17, Missouri

# p/a manufacturers' literature

(Continued from page 178)

tinguishing fire used in these processes: water sprinklers, water fog, air foam, chemical foam, dry chemicals, carbon dioxide. Economic benefits of fire protection discussed. "Automatic" Sprinkler Corp., of America, Youngstown 1, Ohio.

★ **882. A New World of Play,** 32-p. booklet of modern playground equipment. Sculptural forms in weatherproofed materials: galvanized tubular steel, glass fibers, cast stone, aluminum, concrete. Shapes of animals, houses, walls, flying saucers, amphitheaters, provide exploration possibilities, expand play values, and hold child's interest. Attractive brochure contains photos of many forms; specifications; plans. Play Sculptures, Inc., 5 University Place, New York 3, N. Y.

**883. Stacor-Matic,** 4-p brochure showing new drafting unit consisting of adjustable, steel, linoleum-covered drafting table and reference area. Space-saving features include drawer and file space, electrical outlets. Drafting table adjustable by foot control. Several models illustrated. Stacor Equipment Co., 768-778 E. New York Ave., Brooklyn 3, N. Y.

**Hollowell Shelving,** 32-p. looseleaf catalog of steel storage units and accessories with multiple-pierced parts to permit flexible positioning of shelves. Illustrations suggest numerous unit assemblies for use in production areas, tool rooms, offices, stores, or homes. Shows step-by-step procedure for building from simple post and shelf arrangement to fully-enclosed, tamperproof models with backs, sides, boxes, bins, tops, and sliding or swinging doors. Also, sloping shelf types for tool storage; shelf-capacity chart. Available to architects requesting on letterheads. Hollowell Div., Standard Pressed Steel Co., Jenkintown, Pa.

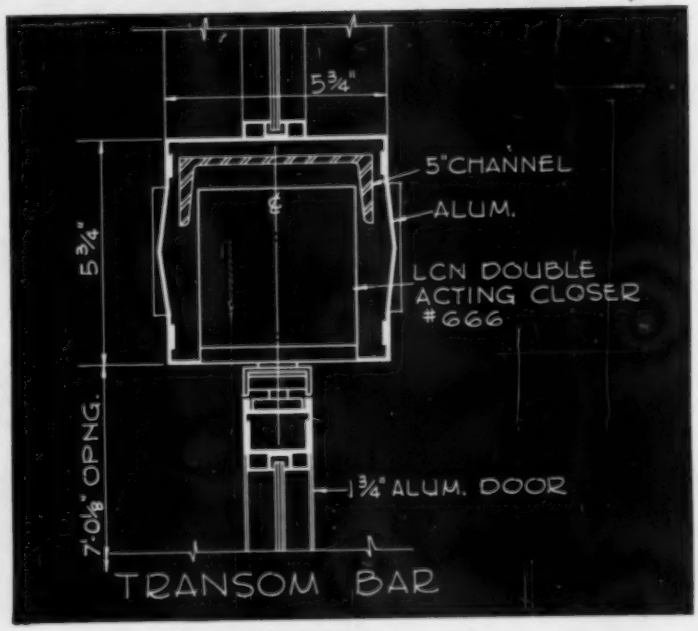
## surfacing materials

**964. Hanley Duramic Brick,** AIA 3-F-2, 4-p. folder encloses pictorial data illustrating variety of effects achieved with vitreous ceramic glazed brick. Photos show several actual installations including walls of New York Museum of Modern Art where bricks of varying tone and mottled pattern are design feature. Also highlights solid and speckled glazes in other applications. Chart listing of standard colors in tile and brick. Hanley Co., Inc., 101 Park Ave., New York 17, N. Y.

★ **965. Crystalline Glazes, Scored Tile,** AIA-23a, 8-p. booklet reviewing abrasion-resistant, textured surface tiling for bathroom floors, countertops, and window sills. Two-page color chart of hues available, with photos of numerous installations. Scored tiles are also obtainable with crystalline glazed surface. Sizes and patterns included. American-Olean Tile Co., Lansdale Pa.

★ **966. Color-Engineered Facing Tile,** 30-p. brochure showing scientific approach to color selection. Contains recommendations for choice of color, depending upon type of industry involved. Illustrations and descriptions of various applications—power plants, chemical industry, food service and processing, school, hospitals. Standard color chart included. Illumination, surface finish, technical data sections. The Facing Tile Institute, 1520 18 St., N.W., Washington 6, D. C.

**967. Floors, Walls, and Countertops,** AIA 23-G, 32-p. 1957 edition of four-color catalog featuring series of color charts showing range of patterns, textures, and color combinations for floor and wall surfaces in numerous tile and linoleum materials ranging from asphalt to cork; each type is recommended for particular residential/commercial installation. Second section supplies installation specifications for tile laid over wide range of floor constructions. Photos show many completed jobs. Congoleum-Nairn Inc., Gold Seal Div., 195 Belgrove Dr., Kearny, N. J.


**CONSTRUCTION DETAILS**

**for LCN Overhead Concealed Door Closer Shown on Opposite Page**

*The LCN Series 644-666 Closer's Main Points:*

1. Flap-free control for double-acting doors
2. Handles exterior doors of normal height up to 3'6" wide; interior doors to 4'0"
3. Power applied by a lever arm; in-swing and out-swing are adjustable separately
4. Used for wood, metal or tempered glass doors having top members 1¾" thick or more
5. Pivots included. Hydraulic back-check. No special threshold needed.

*Complete Catalog on Request—No Obligation*
*or See Sweet's 1957, Sec. 18e/La*

**LCN CLOSERS, INC., PRINCETON, ILLINOIS**

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

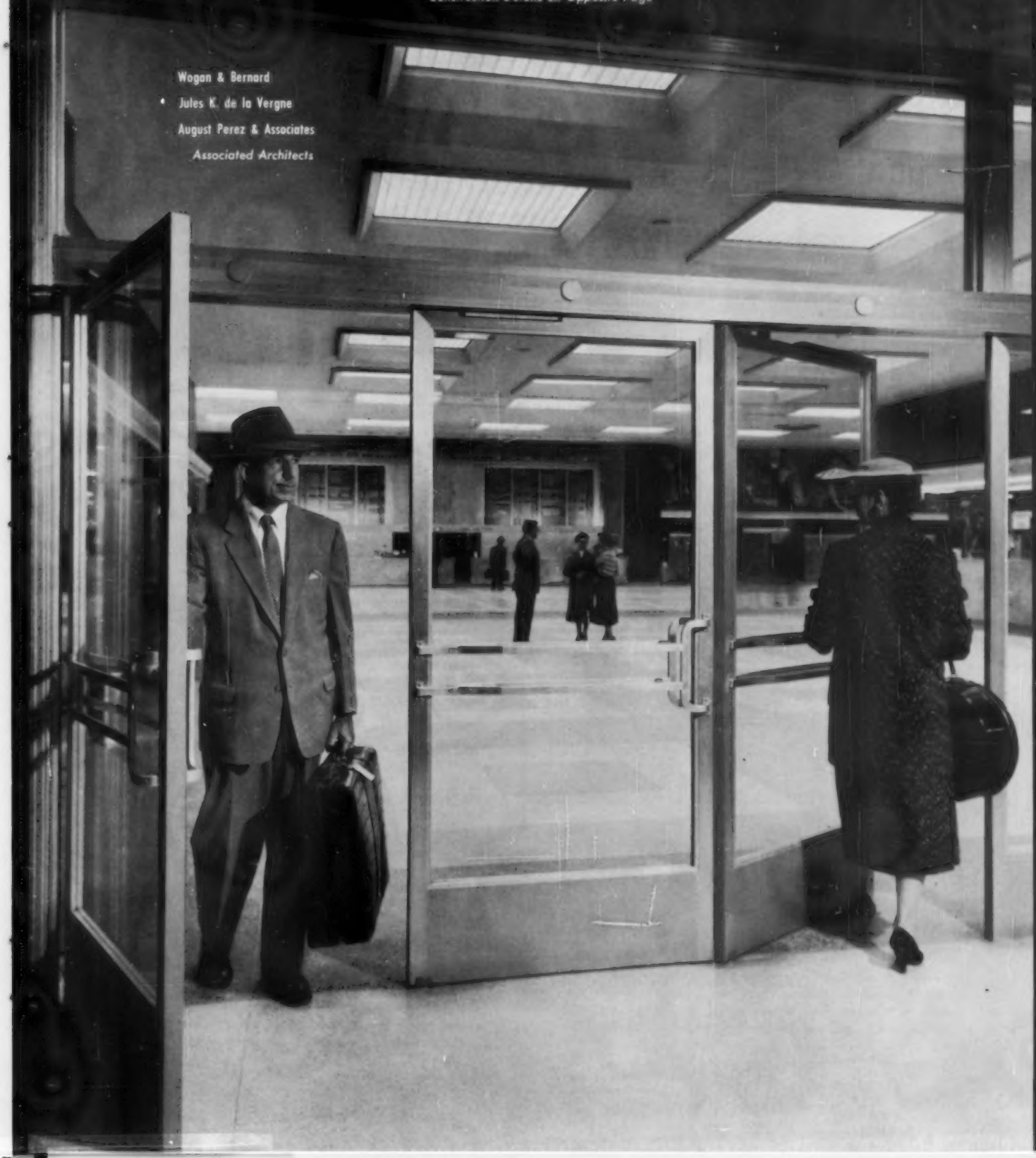
# MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

*UNION PASSENGER TERMINAL, NEW ORLEANS, LOUISIANA*

LCN CLOSERS, INC., PRINCETON, ILLINOIS

*Construction Details on Opposite Page*

Wogan & Bernard
Jules K. de la Vergne
August Perez & Associates
*Associated Architects*



BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

# Which is the best way to combine heating and cooling?

It can be done in a number of ways.

The best way for a particular house depends on its design, the climate, local fuel costs and many other important factors. That's why it's wise to consult the Carrier dealer in your community. He has every type of air conditioning made, so he's able to recommend the most efficient, economical air conditioning for your homes. (Several examples are shown at the right.) Discuss your house plans with your Carrier dealer—you'll find his suggestions invaluable.

Ask your Carrier dealer for the free booklets, "Which Is the Best Way to Air Condition Your Home?" and "Which Is the Best Way to Air Condition Your Business?" Or write to Carrier Corporation, Syracuse, New York.

**You can do it all at once.** A Year-round Carrier Weathermaker* heats and cools from one compact unit. It occupies no more space than most furnaces. The heating section may be oil or gas fired. The cooling section may be either air- or water cooled.

**You can do it in two stages.** Install a Carrier Winter Weathermaker—"the Furnace with a Future" —and you have one-half an air conditioning system. At a later date a cooling coil and refrigeration section is added quickly and easily without adding ducts.

**You can do it with a heat pump.** This Carrier Heat Pump Weathermaker, which uses no oil or gas, represents the ultimate in modern air conditioning. Two-piece design means no inside living space is used. Heats and cools with electricity.

**You can do it all with one control.** A Carrier Control Center, like this one, is a handsome fixture that gives the home owner easy control of both summer cooling and winter heating. Change-over is made by simply moving small switch at the top.

*Reg. U.S. Pat. Off.

**When It's a Question of Beauty that Blends, the Answer Is Ualco**

# control

**For Added Beauty for Your Design and Lifetime Service Without Maintenance**

Your design deserves the finest windows, to blend with the architectural style, to accent every detail of the beauty of the finished building. UALCO Lifetime Aluminum Windows *are* the finest, controlled throughout design and manufacture to help you bring out the best in any type of building. In addition, they give your clients lifetime window operation and beauty, without maintenance. Yet they are priced competitively.

**Each of the more than twenty windows in the Ualco Complete Line is available in any standard or custom size. Call on our large engineering planning staff for help or information.**

Ualco®

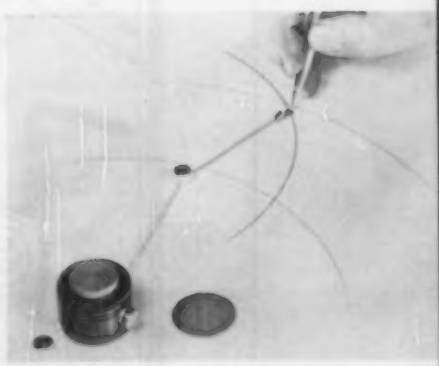
## Southern Sash

SALES AND SUPPLY COMPANY, INC.
SHEFFIELD, ALABAMA

*World's Largest Manufacturer of Aluminum Windows*

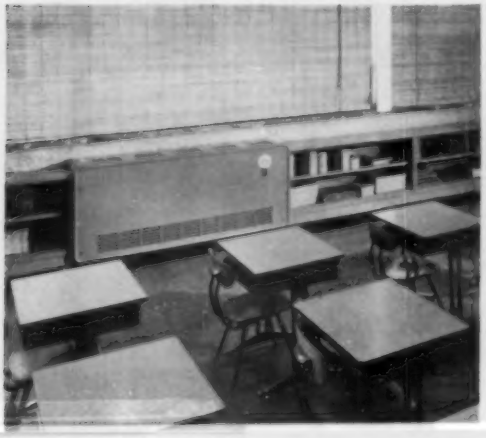
*New floor and roof deck* (above and right) *consists of plank (steel-lattice girder with reinforced-concrete base), lightweight-concrete filler blocks, and concrete topping. Can be cambered during erection. Omnia Construction Co., 30 South Broadway, Yonkers, N. Y.*

*California church* (below), *designed by Architect Kenneth H. Hess, has Filon glass-fiber panels extending along its ridge. Colorful panels filter and diffuse light throughout nave. Filon Plastics Corp., 2051 E. Maple Ave., El Segundo, Calif.*



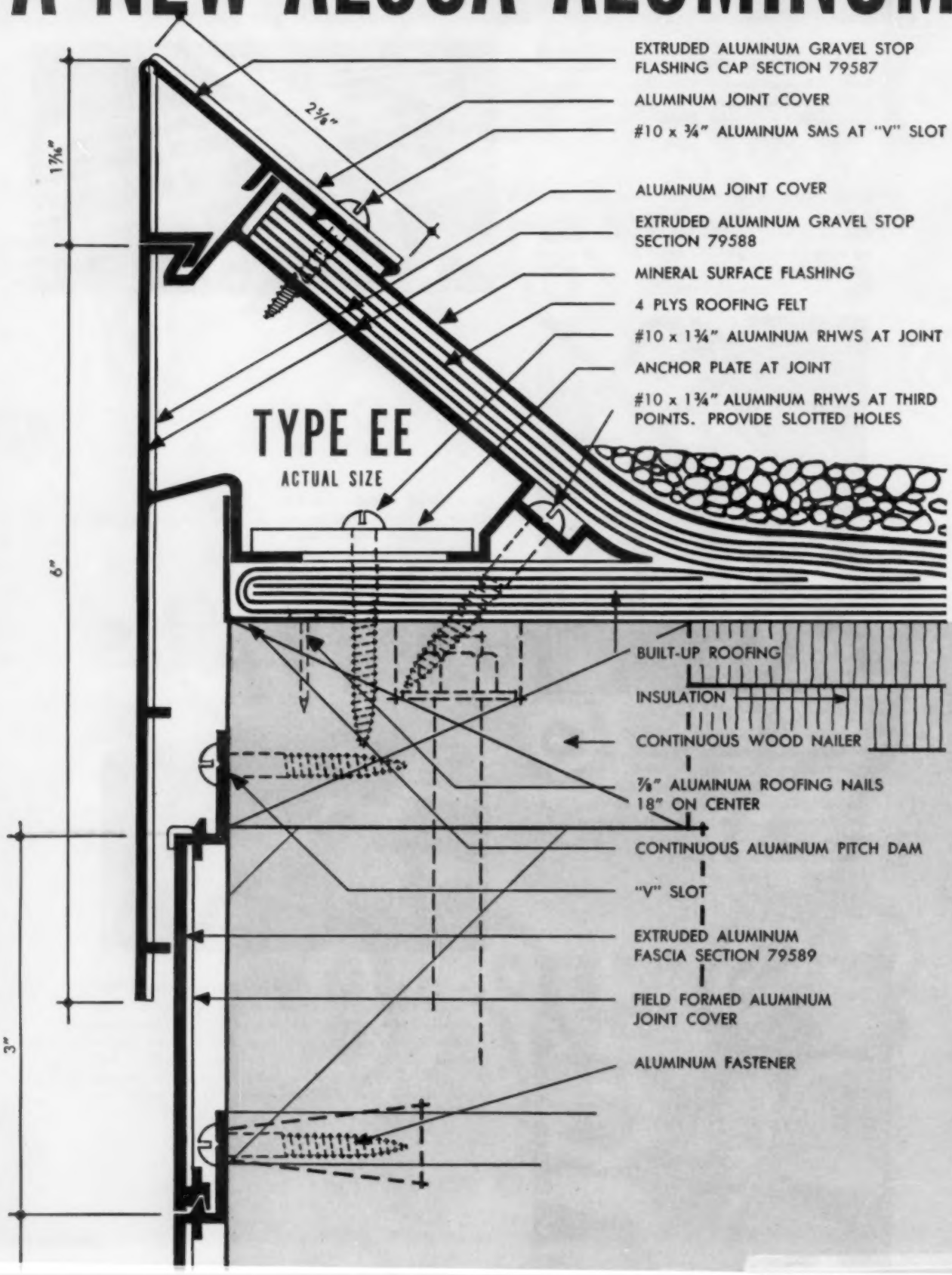
*Turret-shaped metal compass* (right) *can scribe circles up to 12′ in diameter. Measurements are controlled by linelocking clutch and rewind knob. Three interchangeable pins act as seating anchors, rewind handles, and curvature guides. Price: $2.75. Laramie Chemical Corp., 290 Main Street, Stamford, Conn.*

*HerNelCool Mark II school air conditioner* (below) *introduces high volume of tempered outdoor air to offset heat gains from active children, sunshine, and electric lights during fall, winter, and summer. It also rids classrooms of summer heat with cool night air. For future cooling systems, refrigeration water chillers can be added to provide full air-conditioned comfort. American Air Filter Co., Inc., Louisville 8, Ky.*



*At the J. M. Ney Company, Bloomfield, Conn., Plugmold 2000 (20 amps) provides the electrical outlets needed for all areas* (above). *NEMA grounded outlets were also used throughout the office, factory, and laboratory areas. Specifications: length: base and cover, 5′; snap coil, 50′; entrance knockouts: ½″ KO's, 7½″ on centers; screw knockouts, 1¼″ on centers; wiring: No. 12 type TW conductors. The Wiremold Co., Hartford 10, Conn.*

# A NEW ALCOA ALUMINUM



# GRAVEL STOP

## that answers all the problems of sound design

- **Concealed joint covers**
- **Integral cant strip**
- **Fascia extension provides smooth fascia line**
- **A 2-piece self-aligning system that is rapid and convenient to install**

*Detail drawing in actual size at left*

All the inherent advantages of aluminum edging for built-up roofing are found in new Alcoa® Gravel Stop Type EE: long life, low maintenance and low cost—tested and proved in the severest industrial and seacoast atmospheres.

In detail, this new gravel stop Type EE has concealed joint covers, integral cant strip and provision for fascia extensions. The joint cover is inserted in slots behind the gravel stop fascia to assure a smooth fascia line. The cant strip is an integral part of the gravel stop, making it leakproof and furnishing ample strength to prevent break-through of the flashing. Fascia extensions may be used to achieve a deep fascia band if desired, and a soffit trim is available for overhang and marquees. The use of a pitch dam prevents roofing compounds from marking the walls. This 2-piece system forms a self-aligning unit. Application of the flashing cap over the cant strip flashing assures rapid, convenient installation.

For complete specifications and data about gravel stop Type EE, and other Alcoa Gravel Stops, Coping and Roofing Products, call your nearest Alcoa sales office or write Aluminum Company of America, 1890-J Alcoa Building, Pittsburgh 19, Pa.

*Your Guide to the Best in Aluminum Value*

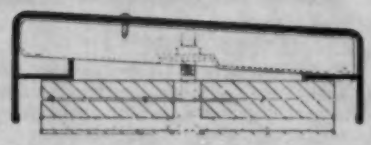
THE ALCOA HOUR
TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

ALCOA ALUMINUM

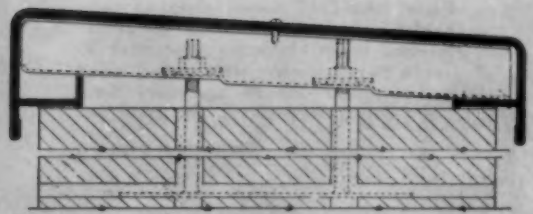
### Coping

Alcoa's Coping Systems for 8" and 12" walls have newly developed anchor gutter bars which anchor the extrusion firmly, assuring watertight joints. Joint covers and corner miters continue the clean contours of the main unit and provide a complete coping system.

TYPE G-8



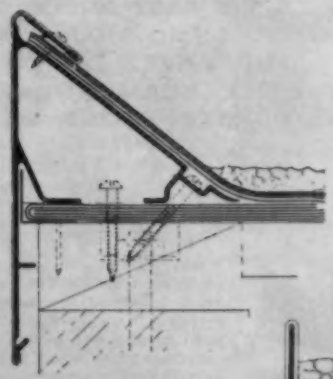
TYPE G-12



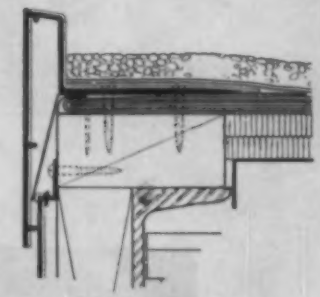
### Other Alcoa Aluminum Gravel Stops

Alcoa Gravel Stop Type E combines gravel stop, cant strip and fascia band in a rugged, watertight, firmly anchored unit that makes an ideal terminal cap for bonded roofing. Type F features an integral fascia and is a simply installed roof terminal unit at minimum cost. Type FF, with fascia extensions or soffit trim, has a smooth, uninterrupted eave line and is designed with a concealed joint cover.

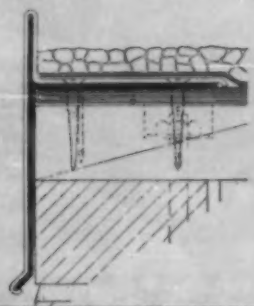
TYPE E



TYPE FF



TYPE F



# p/a products

(Continued from page 187)

## air and temperature control

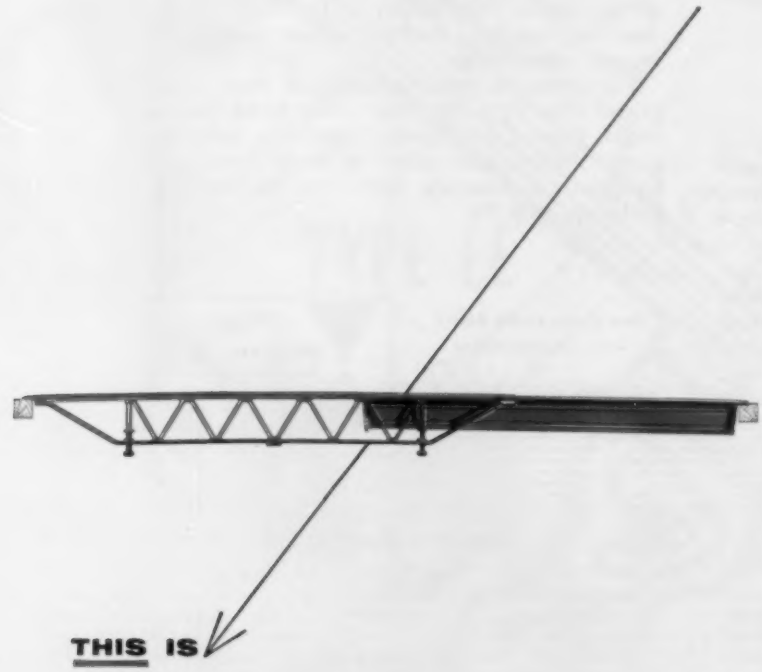
**"L-type" Dust-Magnet Air Filter:** new-type air filter designed for air-conditioning units and warm-air furnaces which cannot use regulation filter with rigid-metal frame. Bound with flexible plastic, filter is only ¼" thick and may be made to any size. Easily rolled for shipment, "L-type" filter can be installed in curved as well as straight positions. Filter operates on electrostatic principle—said to collect up to 2½ times as much dirt as conventional filters. Filter is easily removed and cleaned, and will last indefinitely. Stoddard Industries, Inc., Chicago, Ill.

**Chromalox Electric Heater:** new type, mounted between floor joists below floor level, reduces heat losses usual in conventional equipment. Unit consists of rectangular metal housing, metal-sheathed finned-strip, heating element, and top-floor grill. Housings may be obtained in 30" and 14" lengths. All-metal, breakproof, moistureproof flat strip finned for quick distribution of heat. Supplied for 120 or 240 volt a.c. with outputs of 350 watts in shorter length and 750 watts in 30" length. Two-stage types also available. Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa.

## construction

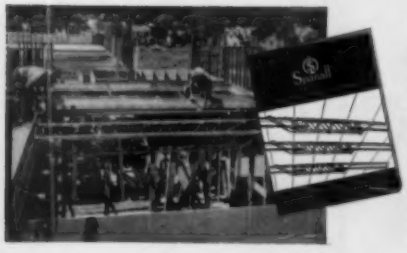
**Asbestos-Cement Wallboard:** all-purpose cement wallboard — fireproof, waterproof, and rot-proof—is available in two grades: Pab-flex, used where great flexibility is necessary; and Pab-rok, a utility grade. Color is natural stone gray; material can be hosed or scrubbed without harm. Board, available in 4'x8' and 4'x4' sheet sizes, has many applications — partition walls, firewalls, house skirting, dairy barns. Pabco Building Materials Div., Fibreboard Paper Products Corp., 475 Brannan St., San Francisco 19, Calif.

**"Titewall" Joint Sealer:** rubber, control-joint sealer offers protection against water leakage at control points in block- and masonry-wall construction. Material is synthetic-rubber compound, durable and elastic. Double-butterfly design aids water barrier efficiency and allows easy installation. Once installed, sealer remains in place without clips. Available in several widths, 10' lengths. Servicised Products Corp., 6051 W. 65th St., Chicago, Ill.

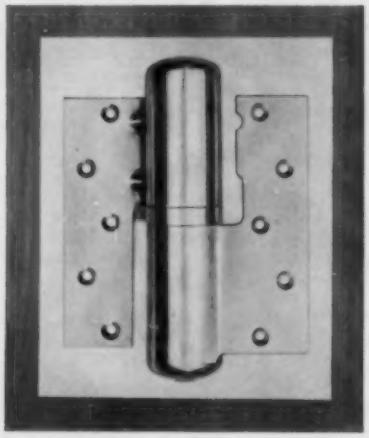



THIS IS Spanall®
HORIZONTAL SHORING

ADJUSTS FAST AND EASY TO ANY DESIRED SPAN LENGTH ...AND SAVES UP TO 40% ON ALL BEAM AND SLAB CONCRETE FLOOR FORMS



It takes careful planning and designing to attain economy – and that's where Spanall works to advantage. Spanall permits the Architect to design for varied and longer span lengths, with generous load bearing capacities based on a 2.17 safety factor... permits the Contractor to realize important savings from (1) ease of installation and (2) free, workable access to the floor areas below Spanall formwork. See Catalog for engineering data; write for your copy to Dept. 0, SPANALL OF THE AMERICAS, INC., 787 United Nations Plaza, New York 17, N. Y.

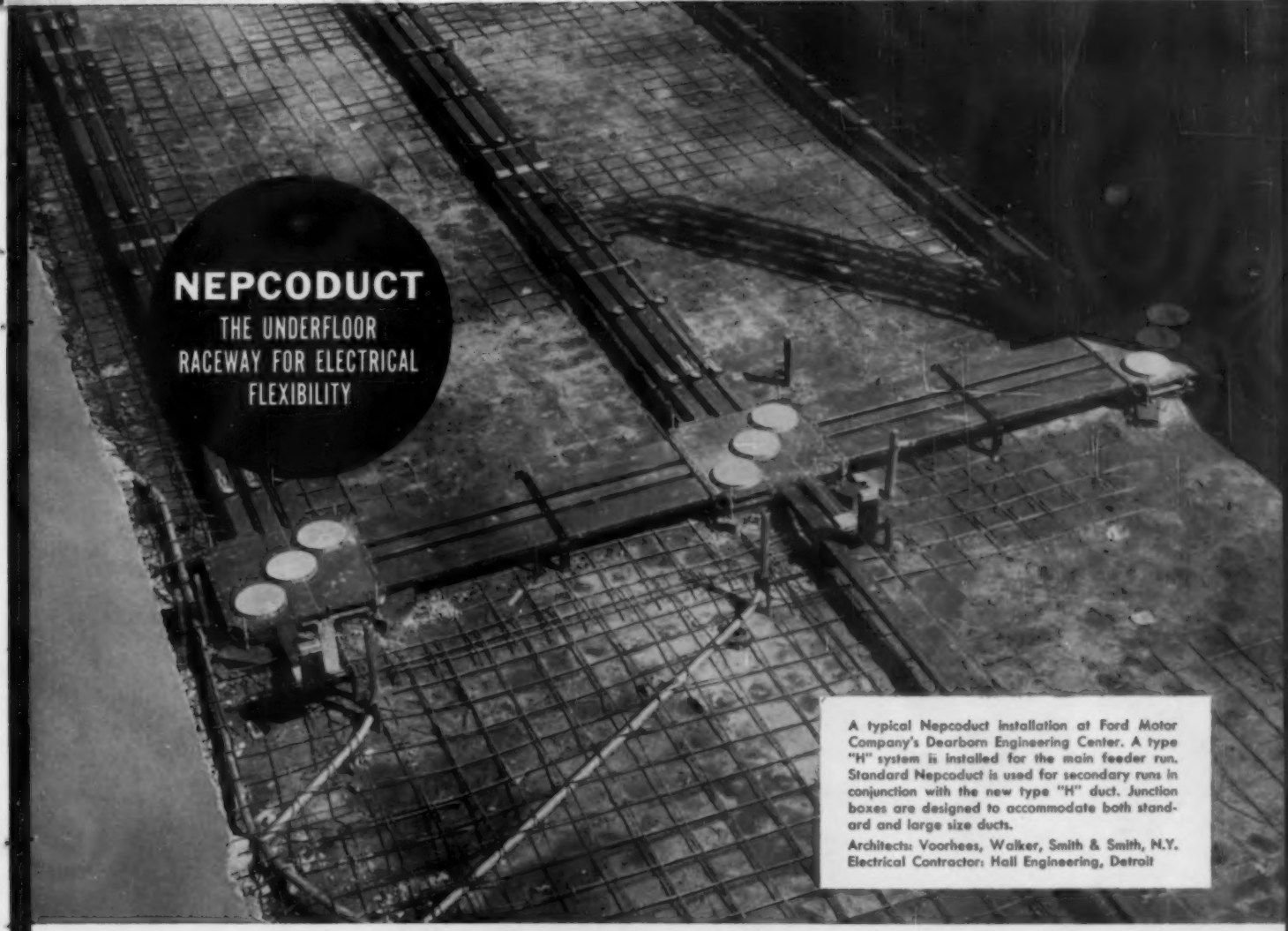



## doors and windows

**Hydro-Hinge:** new hydraulic hinge (*above*) permits complete freedom in design of door and frame by obviating need for arms, brackets, or housings. Self-contained unit is rugged, durable, simply installed, and easily adjusted to insure exact door fit and noiseless closing. Bakewell Products, 1128 Mission St., South Pasadena, Calif.

**Paine Rezo-Fold Doors:** complete, easy-to-install doors feature tongue-and-groove meeting which eliminates floor track or guide. Swivel hangers with 4-wheel nylon rollers provide smooth operation. Hardwood panels are matched for grain and

(Continued on page 192)




A typical Nepcoduct installation at Ford Motor Company's Dearborn Engineering Center. A type "H" system is installed for the main feeder run. Standard Nepcoduct is used for secondary runs in conjunction with the new type "H" duct. Junction boxes are designed to accommodate both standard and large size ducts.

Architects: Voorhees, Walker, Smith & Smith, N.Y.
Electrical Contractor: Hall Engineering, Detroit

# FORD standardizes on larger capacity underfloor raceways for main feeder runs . . .

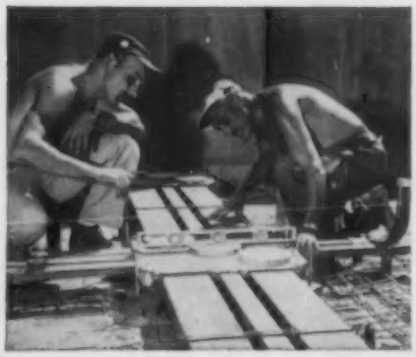
**New National Electric "H" System used in Dearborn Engineering Center and Rawsonville office buildings**

A type "H" system, the latest addition to National Electric's standard Nepcoduct Underfloor Raceway line, has been specified by Ford Motor Company. It will provide full electrical distribution throughout floor areas at the new Dearborn Engineering Center and Rawsonville Office Buildings.

Type "H" Nepcoduct, with a cross section of 1⅜" x 6⅜", has increased capacity to accommodate the large size cable feeds required to serve modern power and telephone facilities. It is especially suited to the growing electrical needs of network teletype, data processing and extensive communication equipment.

All Nepcoduct components including type "H" can be installed as a one, two or three duct system with large hand hole openings in junction units to provide easy access to power, light and communications systems. Adaptable to any type of floor construction, Nepcoduct makes outlets available wherever they are needed for efficient office layout. Electrical service changes can be made quickly and at low cost to the owner or tenant . . . without interrupting business routine.

When you build, specify NE Nepcoduct to be sure the building will never grow old electrically. Write for complete information today.



Quick and economical to install, Nepcoduct provides separate wiring facilities for light, power, inter-communication and telephone. Streamlined service fittings less than three inches high are provided with standard receptacles of 15 to 50 amperes capacity and with bushed openings for telephone and intercom use.

## National Electric Products

PITTSBURGH, PA.
2 Plants • 12 Warehouses • 41 Sales Offices

(Continued from page 190)

color, and are available in any commercial type of natural wood. Air-vented, all-wood grid core construction gives dimensional stability. Thickness is 1⅜" for openings 2' to 6' wide and 6'-8" to 8' high. Paine Lumber Co., Oshkosh, Wis.

### electrial equipment

**Luxtrol Light Control:** new type of light control designed for higher wattage requirements of residential systems. Autotransformer produces full dimming, blending, brightening effects for 750 watts (incandescent) or twelve 40 watt (rapid-start fluorescent) lamp loads. Operating knob and faceplate are styled to blend with any decor. Dimensions of the wall box: 5⅞" wide, 7⅛" long, 5⁹⁄₁₆" deep. No external switch is required except for fluorescent circuits. Input switch automatically disconnects unit when knob is turned off,

while thermal overload relay and fuse link protect unit from overloads. The Superior Electric Co., Dept. WB75, 83 Laurel St., Bristol, Conn.

### specialized equipment

**Majestic Incinerator:** modern gas-fired home incinerator features new exterior design similar to other automatic appliances and new interior engineering. Appearance resembles automatic dryer; controls are mounted on inclined backboard above the counter top. Interior design includes "suspended burning"—rubbish is suspended in pool of air for increased drying action, safety shutoff for gas burner, automatic timing of burning cycle, six-point flame spreader, non-aerated pilot burner, easy access to pilot. Smoke is said to be drawn into "Turbo Chamber." Unit is covered with heavy, foil-faced spun glass insulation. Increased air flow by venturi flue collar into air space between insulation and inner casting gives downdraft action in firing chamber. The Majestic Co., Inc., Huntington, Ind.

### surfacing materials

**Edge Scarification:** newly developed method or resurfacing floors which effectively reduces maintenance problem. Process involves jack-hammering a triangular trough, ¾" deep at deepest point, extending 1" from edge of each aisle to center

of old floor area *(sketch above)*. Following application of a nonreversing bonding agent, a heavy-duty Cortland emery aggregate concrete flooring ¾" deep is laid on top of surface into two troughs. Incline is formed between top of new surface and original floor at each side of aisle. Edge-scarification gives an all-over ¾" depth instead of a raised surface. Walter Maguire Co., 60 E. 42 St., New York, N. Y.

**Modern Maid Range:** ultra-thin drop-in range combines conduit box, controls, and cooking tops in single unit to eliminate under-counter installation work and permit use of drawers directly below unit. Four-burner range in stainless steel or copper-tone-porcelain finish fits into single counter cutout; automatic temperature-control dial and auxiliary griddle are optional. Tennessee Stove Works, Chattanooga, Tenn.

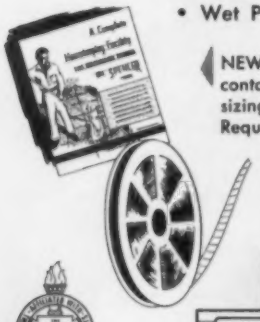
NEW SPENCER Vacuslot

. . . the truly modern cleaning system

SEE for yourself why this easily installed, inexpensive, *completely practical* cleaning system is proving so popular. There's just nothing like it for schools, hospitals, other predominately bare floor buildings. VACUSLOT capitalizes on the ease and speed of dry mopping, yet assures the dust-free, germ-free sanitation that only *vacuum* can provide.

The SPENCER VACUSLOT System simplifies *all* cleaning tasks, including.

• Routine Maintenance • Vacuum Cleaning • Mop Cleaning
• Wet Pick-Up • Boiler Cleaning



NEW bulletin describes VACUSLOT System . . . contains "in use" photos, schematic drawings, sizing information and typical specifications. Request Bulletin 153C.

NEW 20 minute color movie shows typical Spencer Vacuum Systems in operation. Write requesting showing at your convenience.

The SPENCER TURBINE COMPANY
HARTFORD 6, CONNECTICUT

# HANLEY BRICK

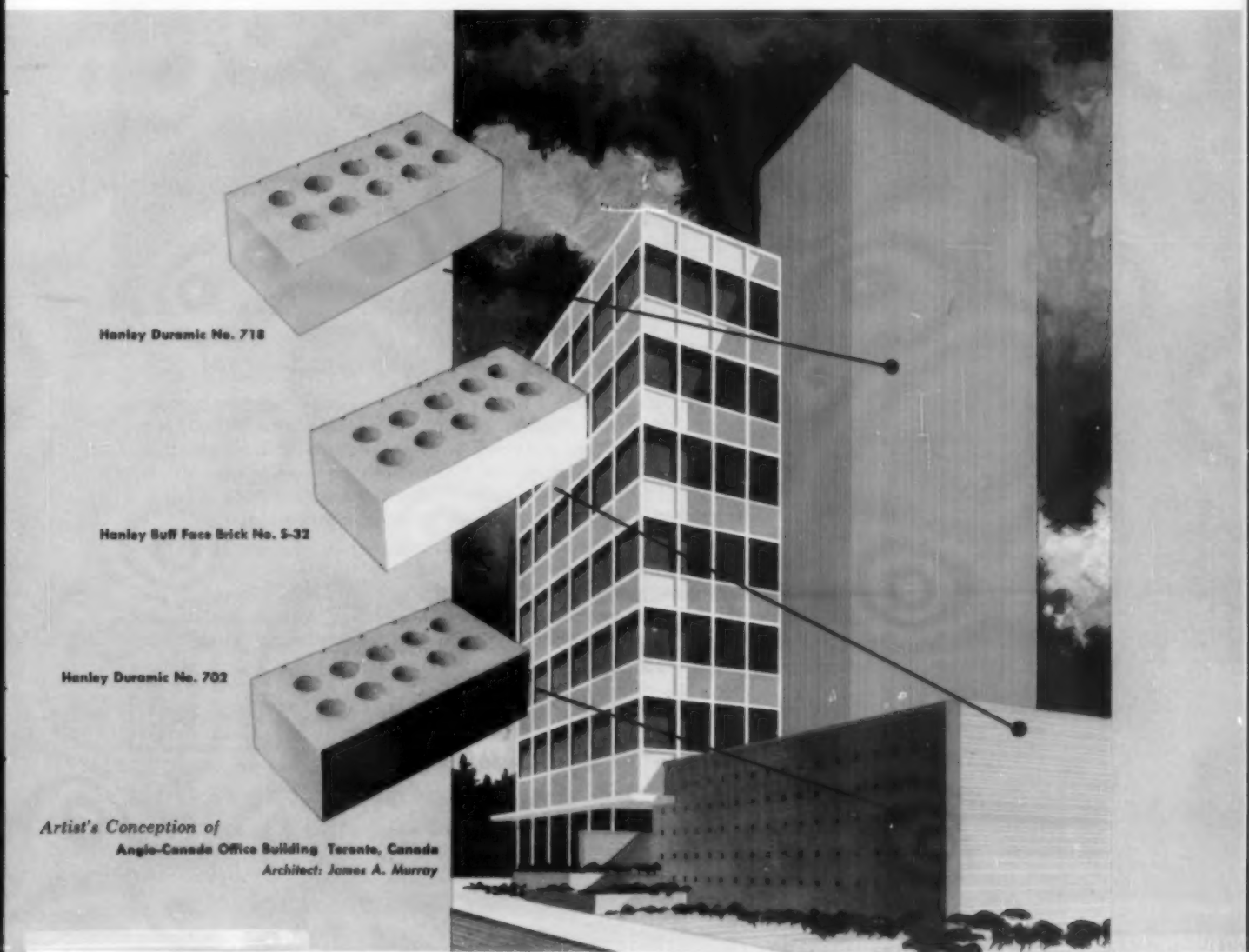
A dynamic new silhouette on Toronto's skyline is the Anglo-Canada Fire and Insurance Company office—a building whose drama stems from the interplay of colors and textures.

The solid shaft of green Hanley Duramic Brick No. 718 balances and complements the glass-and-steel column and contrasts with the plane of black Hanley Duramic Brick No. 702, laid in a fretwork design. Another blending component of this spectacular building is the neutral expanse of that long-time favorite, Hanley buff face brick.

Brick—one of man's oldest building materials, yet compatible with all other elements—again proves itself timeless in feeling, beauty, strength.

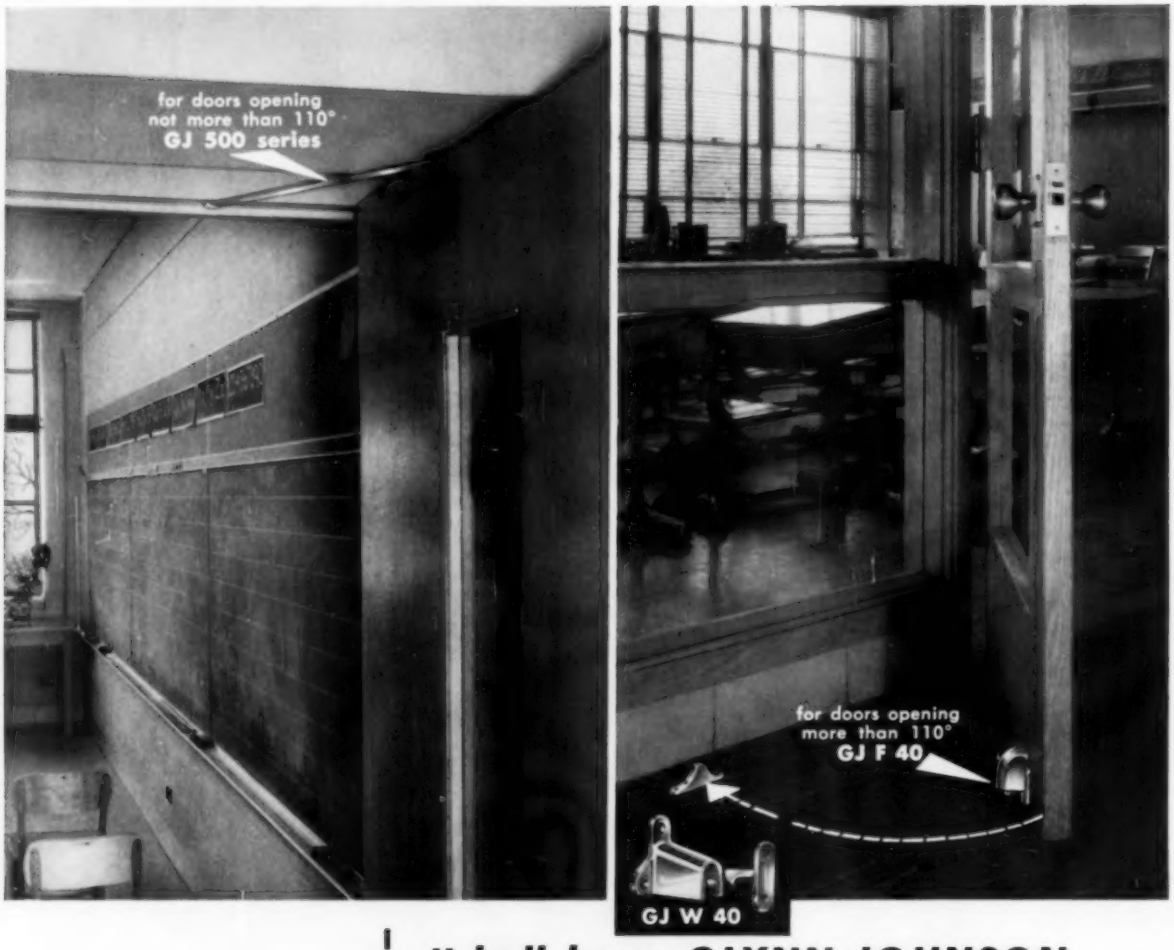
**HANLEY COMPANY**
**INCORPORATED**

**PITTSBURGH:** One Gateway Center • **NEW YORK:** 101 Park Avenue
**DETROIT:** 14976 Schaefer Highway • **BUFFALO:** 625 Delaware Ave.




*Artist's Conception of*
**Anglo-Canada Office Building Toronto, Canada**
*Architect: James A. Murray*

# *2 ideal specifications for efficient*
# CLASSROOM DOOR CONTROL




These ideal GJ specifications for classroom doors are used in such outstanding schools as:

**Chicago Public Schools, Chicago, Illinois**

**John Muir Jr. High School, San Leandro, California. Schmidts, Hartman and Wong, Berkeley, Calif. — architects**

**Sinclair Lane Elem. School, Baltimore, Maryland. Edward J. Hofstetter — architect**

**Algonquin School, Des Plaines, Illinois. Childs and Smith, Chicago, Ill. — architects**

**Wellesley Senior High School Addition, Wellesley, Mass. Perry Shaw Hepburn & Dean, Boston, Mass. — architects**

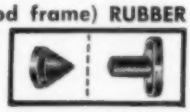
*Also GJ shock absorbing door holders for entrance and other heavy duty doors.*

## *"shall have GLYNN·JOHNSON . . .*

**GJ 500 series CONCEALED (or surface mounted) OVERHEAD DOOR HOLDERS."** (Most efficient shock absorbing device for holding door open at any specified degree up to 110°. Resilient spring cushion absorbs force of violent openings. Holds door conveniently open for continuous "through" traffic. Overhead, they present no stumbling hazard, are tamper-proof and cannot interfere with cleaning.)

**"GJ F 40 FLOOR TYPE (or GJ W 40 wall mounted) COMBINATION DOOR STOP AND HOLDER."** (This simple, foolproof device engages silently and automatically to hold door open. Releases with a firm pull. Rounded surfaces prevent children from "riding" bumper or damaging floor plate. Especially recommended for doors opening more than 110°.)

**"THREE GJ 64 for metal frame (or GJ 65 for wood frame) RUBBER SILENCERS."** (Form pneumatic air pockets to absorb shock or noise of closing and create constant latch tension . . . no door rattling.)



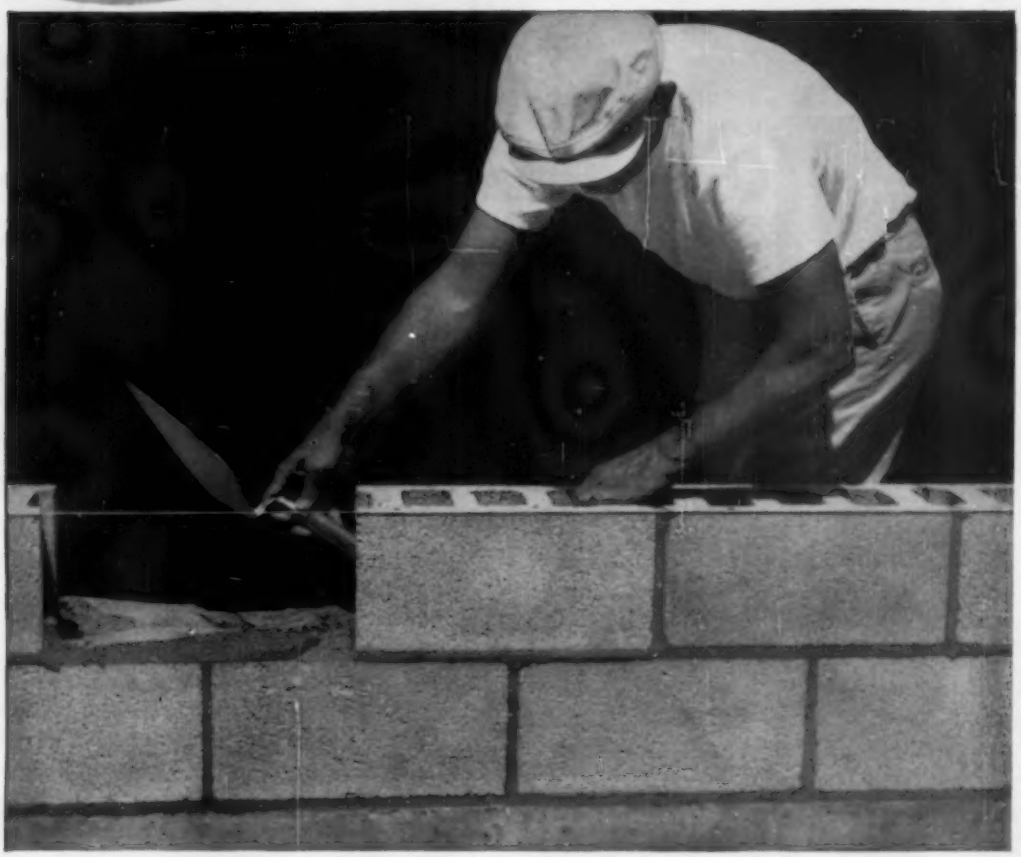
**write for SCHOOL DOOR CONTROL brochure B-9/GL**

**GLYNN·JOHNSON CORPORATION**

**4422 n. ravenswood ave. chicago 40, illinois**

# BRIXMENT

## *Better Mortar for Blocks*

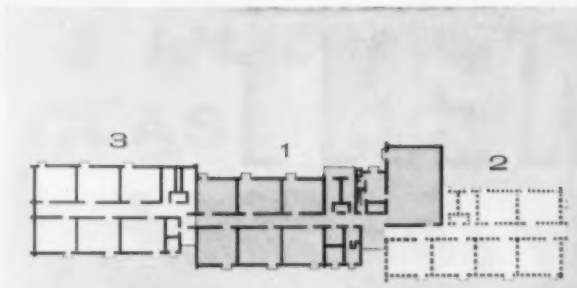


## STAYS WORKABLE LONGER

To get a good bond between concrete blocks, the bricklayer must shift and adjust each block to its final position, before the mortar has stiffened.

Brixment makes it easier for the bricklayer to do this. Brixment mortar stays plastic longer in the wall because it has high water-retaining capacity, which provides greater resistance to the suction of the block. This gives the bricklayer more time to adjust and shift the block to its final position, while the mortar is still plastic enough to form a good, tight bond.

**Louisville Cement Company . . . Louisville 2, Kentucky**



Fenestra
SCHOOL DESIGN NEWS

View of the Booth Hill School shows basic Module No. 1 to which Module No. 3 is being added (photo at right). School construction costs average $12.01 per square foot as compared with $17.00 to $18.00 for schools in this area of conventional design and materials. **Architect:** Jesse James Hamblin, Bridgeport, Conn. **Contractor:** (Module No. 1) The Frouge Construction Co., Bridgeport, Conn.

## *How modular planning helps Trumbull, Conn., schools*

# HOLD DOWN CONSTRUCTION COSTS

As in so many communities today, the Trumbull, Connecticut, school system is literally bursting its britches.

Fortunately, however, the farsighted school board selected a modular concept of design easily adaptable to various sites. This permits economical construction and expansion of school buildings, despite constantly increasing building costs.

The building system includes a basic school unit, Module No. 1, consisting of six classrooms, administrative offices and a large multipurpose room (with kitchen) which can be used as a cafeteria, recreation and assembly area. To this basic unit can be added other modules of six classrooms each as the need arises, at a minimum of expense.

The secret of the system is in the use of standard building material components. For instance, the roof and ceiling construction of each module classroom unit is built of modular Fenestra* Acoustical-Structural Building Panels.

These lightweight, high-strength steel panels combine structural roof and finished interior ceiling with *built-in acoustical treatment* in one compact easy-to-handle package. They replace *five* different materials —usually requiring extra labor and cost—with *one* metal building unit, erected in *one* operation, by *one* trade.

In addition, the Trumbull, Connecticut, schools are designed to utilize the panel cells as ducts for ventilation, with exhaust fans mounted on the roof. Another Fenestra plus!

The flat bottom surface of the panels is perforated for the acoustical ceiling. An exclusive Fenestra preformed, arched, sound-absorbing batt† is enclosed *inside the panels* to provide noise reduction coefficients up to 80%. And because the ceiling plate is a part of the structural panel, it is made of 16-gauge steel—4 times thicker than usual metal-pan ceilings. This assures extra resistance to damage by objects thrown against the ceiling or other impacts—an especially important feature for gymnasiums, corridors, etc.

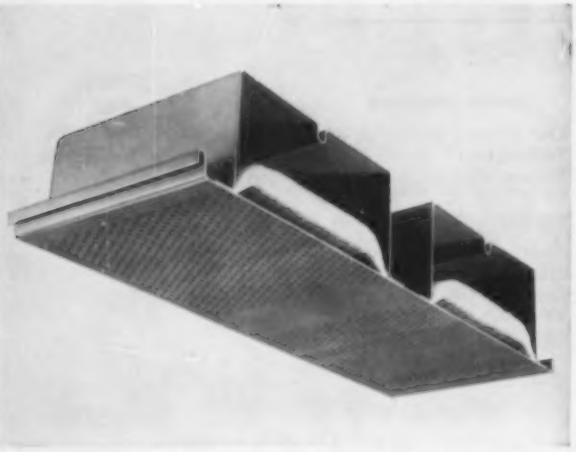
The compact construction, 7½ inches in depth, provides a reduced height in the building—thereby eliminating several brick courses throughout.

Cellular in design, Fenestra Building Panels combine light weight with great strength. Under normal roof loads they span up to 31 feet. Their width, 24 inches, fits perfectly with modular design techniques. This speeds up construction and eliminates cutting and fitting of panels and other materials on the job.

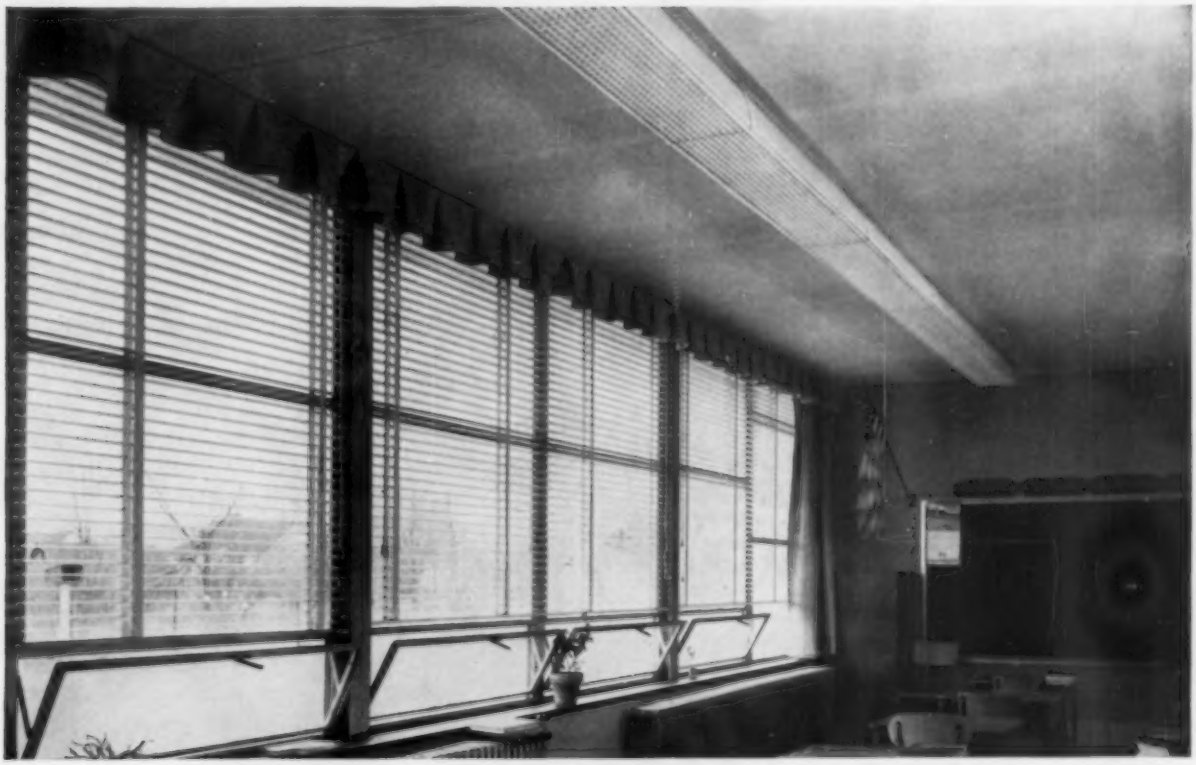
If you are now planning a new school building or addition, you should get complete details on Fenestra Acoustical-Structural Building Panels. Mail coupon at right for your FREE copy, or call your Fenestra representative.

*Trademark †Patent Pending

Fenestra Acoustical Building Panels provide a platform for workmen, speed roofing operation, get classrooms under cover fast for quicker starting of interior work. **Contractor:** (Module No.3) The Monaco Construction Co., Bridgeport, Conn.



The Fenestra Acoustical "D" Panels, which span the classroom below, can be washed or painted whenever needed without affecting the acoustical qualities of the ceiling. Width—24"; Depths—1½", 3", 4½", 6" and 7½".



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### books received

**The Artist's Handbook of Materials and Techniques.** Revised edition. Ralph Mayer. Viking Press, 625 Madison Ave., New York 22, N. Y., 1957. 721 pp., illus. ed. $6.75; text ed. $5.25

**Electrochemistry: Principles and Applications.** E. C. Potter. The Macmillan Co., 60 Fifth Ave., New York 11, N. Y., 1957. 418 pp., illus., $10

**The Art of Architecture.** A. E. Richardson & Hector Corfiato. Third, revised edition. Philosophical Library, Inc., 15 E. 40 St., New York 16, N. Y., 1957. 744 pp., illus., $25

**Architecture as Space.** Bruno Zevi. Horizon Press, 220 W. 42 St., New York 36, N. Y., 1957. 288 pp., illus., $7.50

**Improving the School Environment.** Edited by Jon S. Peters and Raymond C. Schneider. School Planning Laboratory, School of Education, Stanford University, Stanford, Calif., 1956. 128 pp., illus., $4

**The Autobiography of an Idea.** Louis Sullivan. Dover Publications, Inc., 920 Broadway, New York 10, N. Y., 1956. 330 pp., illus. $1.85. A new, unabridged republication of the first edition of 1924, with an introduction by Ralph Marlowe Line, Associate Professor of Architecture, University of Illinois. Thirty-four photographic illustrations of Sullivan's works, taken by Professor Line, accompany the text and a new index has been added.


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### an outstanding contribution

**A History of Technology.** *Vol. II: The Mediterranean Civilizations and the Middle Ages. Edited by Charles Singer. Oxford University Press, 114 Fifth Ave., New York 11, N. Y., 1957. 802 pp., illus. $26.90*

To review in detail a book of the scope of this general *History of Technology* would be a superhuman enterprise, as it is encyclopedic in both length and coverage. The various sections of this definitive work range from a history of Mining and Quarrying to Food and Drink, to Machines, Military Technology, and Alchemical Equipment. Just as in the first volume, previously published, the foremost scholars in their respective fields are the authors of 21 individual chapters in this second volume, covering roughly the period between 700 B. C. and 1500 A. D. The well thought-out scheme, developed by the editors, subdivides the vast material into five parts: Primary Production, Manufacture, Material Civilization, Transport, and Practical Mechanics and Chemistry. Excellent chronological charts offer the reader the best possible orientation in time and evoke immediately synchronistic associations familiar from previous studies. The 695 figures in the text and many illustrations on

(Continued on page 202)

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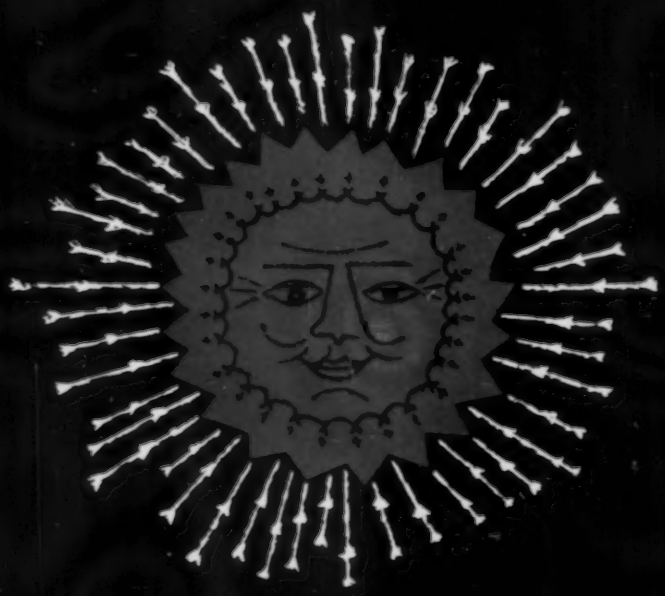

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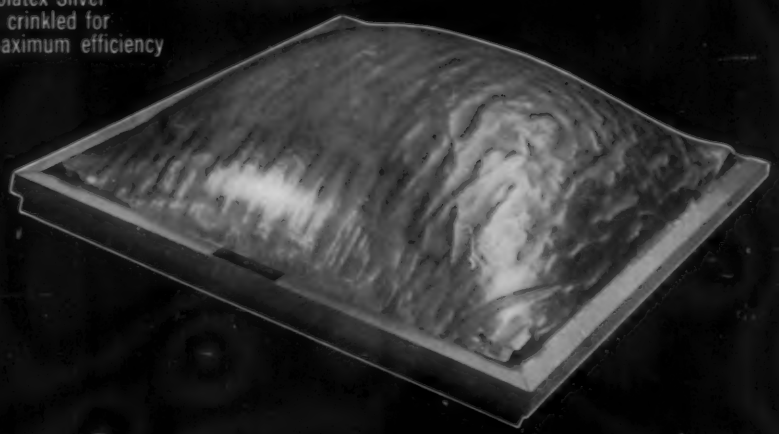

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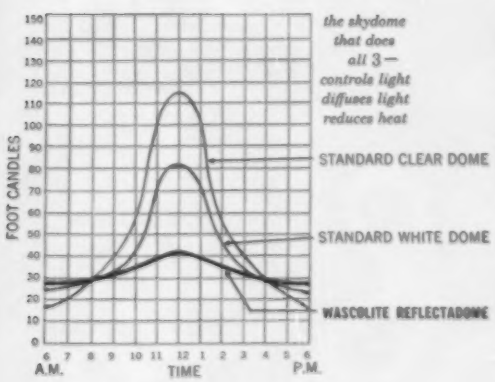


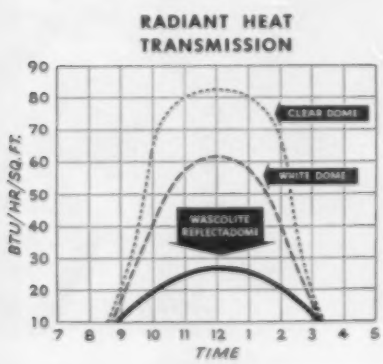

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# reviews

(Continued from page 198)

44 plates provide the student with a comprehensive variety of details which can not be encountered together in any other single place. As emphasized in the preface, when they were concerned with the ancient empires, the authors had to rely essentially on archeological findings; here, however, in the second volume, referring to the Mediterranean civilizations and the Middle Ages, literary evidences are ample.

Even the most superficial report on the results of research concerning the whole orbit of technology covered here would fill many pages; thus we should like to give only an idea of those chapters which are of prime interest to the architect; i.e., "The Medieval Artisan" and "Building Construction," subdivision of Part III. After brief sociological remarks on the "Interrelation of Crafts," R. H. G. Thomson of the National Gallery, London, deals with the gradual development of the crafts of the stone mason, of the carpenter and ship builder, and of the smith, by drawing on the evidence of mosaics, illuminated manuscripts, stone reliefs, and early woodcuts. Such technological processes as the baking of bricks and the cutting of stone are clarified—as is the building of ships and bridges. In connection with the evolution of individual tools such as hammers, chisels, files, etc., the relationship between human labor and the development of new tools is emphasized.

The dynamism of the Middle Ages, a period often considered to be lacking in technical curiosity and ambition, is proved in the chapter on the Gothic period. The section on "Building Construction" by Martin S. Briggs of which the aforementioned chapter is the last, represents a comprehensive history of architecture seen, of course, exclusively from the technological viewpoint, without consideration of esthetic values. In the chapters on the Greek and Roman periods, the archeologist will be especially interested in the analysis of the connection between wood beams, rafters, and struts — and stone. The function and uses of iron were more general than one supposes —not only as clamps, but also as small cantilever girders, lifting tackle, etc. Vitruvius, of course, represents the main source for Roman construction data. The story of the gradual introduction of marble, concrete, and bricks, and their specific uses is more manifold than we were likely to believe (one might just think of the weight-relieving brick arches in the walls and cupola of the Pantheon in Rome).

Compared with the elaborate technical means of the Roman period, the Byzantine and Romanesque centuries contributed relatively little to

(Continued on page 206)

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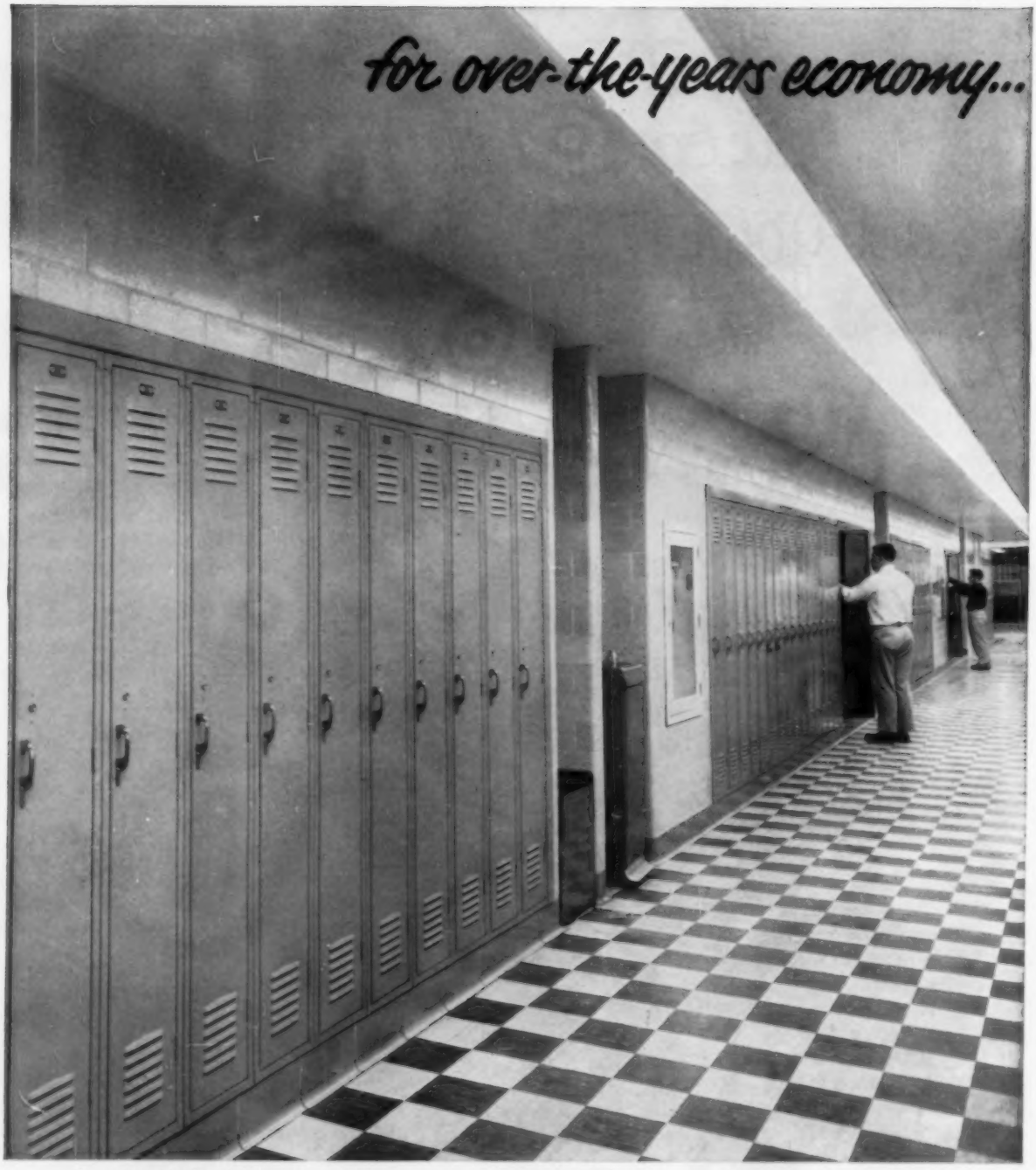


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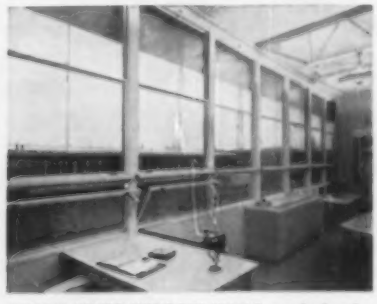

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## reviews

(Continued from page 202)

technical progress, independent of the artistic value of their creations. It was in the Gothic period that the tempo of technical invention was accelerated and went beyond the well known progressive reduction in the thickness of walls from the Romanesque to the Gothic centuries, and beyond the structural development of Gothic ribbed vaults. Such details as the stereotomy of Gothic masonry, decisive for tracery windows, are usually overlooked as is the gradual evolution of molded brickwork. (I might mention here that I believe that the story of wood-roof construction is probably too concentrated here on a description of English Gothic.)

Though this review has very briefly summarized the content of those chapters which have a special interest for architects, it might be mentioned, too, that the technology of the applied arts—from furniture to ceramics, glass and metal works—will also evoke a great response among architects.

It is only to be expected that a work of this compass, scientific ambition, and thorough scholarship should be equipped not only with the most original illustrations of which only very few are familiar, but also with the most extensive up-to-date bibliography and index. This instrumentarium makes it still more useful even for the general reader who quite unprofessionally wants to enlarge his knowledge of the past.

PAUL ZUCKER
Architectural Historian, Professor
New York, N. Y.

### quality in furniture design

**Modern Danish Furniture.** *E. Hiort. Architectural Book Publishing Co., Inc., 883 First Ave., New York, N. Y. Illus. $8.50*

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(Continued on page 210)

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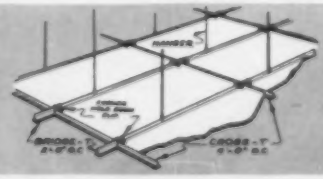

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*The Millburn High School, Millburn, N. J. Architects: Epple and Seaman; Consulting Engineer: Herbert Fox. Heating & Ventilating Contractor: Johansen Company.*

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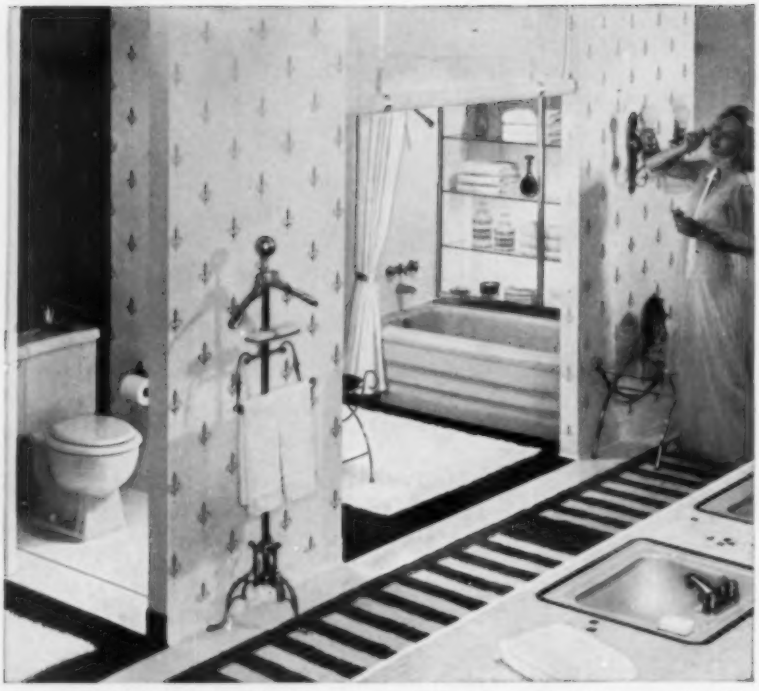

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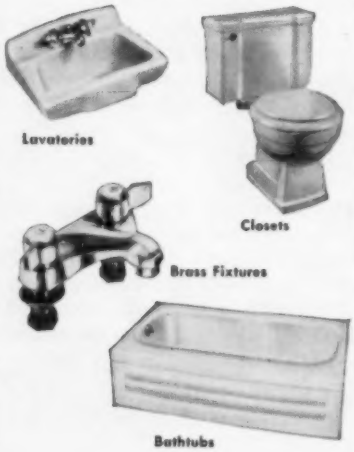


**Free Catalog** *Write for catalog No. M-10, a 96-page catalog with specifications, photographs and complete information on Gerber brass, vitreous china, and steel enamel ware.*

Guaranteed by Good Housekeeping

GERBER Plumbing Fixtures

Gerber Plumbing Fixtures Corp., 232 N. Clark St., Chicago 1, Ill.
*5 Modern Plants:* Kokomo, Ind.; Woodbridge, N. J.; Delphi, Ind.; Gadsden, Ala.; Walt Delphi, Ind.
*Export Division:* Gerber International Corp., 500 Green St., Woodbridge, N. J.

# reviews

(Continued from page 206)

signs are available for purchase in the U.S.A.

Third in a series on modern Danish applied art, this book is edited by the Danish Architect Esbjørn Hiort, MAA, who has also written the introduction. The introduction is in itself a comprehensive and enlightening exposition of the development of modern furniture design and production in Denmark. This process, differing so sharply from American methods, has encouraged the exclusive products of the cabinetmaker's art, executed in collaboration with young, progressive architects, to set the standard for commercial furniture. Regularly held exhibitions, both of the craftsmen's work and of the industry's work, are subjected to professional criticism by architects and others who see a social mission in the creation of practical types of furniture in keeping with the times. Such criticism, not only invited but, more important, accepted and conscientiously acted upon, accounts (feels the author) for the suprisingly high quality of both design and production in today's Danish furniture.

The book's large, clear photographs illustrate examples of furniture by 23 of Denmark's leading designers, some familiar to us and others new. Each piece is identified both by designer and producer (whether cabinetmaker or factory) and the index provides addresses of all cabinetmakers and factories.

Text and captions are in English, French, German, and Danish. L. S.

### easily understood

**Timber Design and Construction Handbook.** *Timber Engineering Company, F. W. Dodge Corp., 119 W. 40 St., New York, N. Y. 1956. 622 pp., illus. $12.75*

Compiled and edited by the Timber Engineering Company, this work is

(Continued on page 214)

**Raintight Clampmatic Vacu-Break**—a fusible or nonfusible switch completely weather-proof. Ratings from 30 to 200 amps.

**Junior Clampmatic Vacu-Break**—a high-quality, fusible, general-purpose switch. Ratings range from 30 to 600 amps.

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Three exclusive *safety firsts* are the mark of *all* BullDog switches. They assure top efficiency and performance . . . bring *extra* protection and longer life.

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**BullDog Electric Products Company, Detroit 32, Michigan • A Division of I-T-E Circuit Breaker Company • *Export Division:* 13 East 40th St., New York 16, N.Y. *In Canada:* BullDog Electric Products Co. (Canada), Limited, 80 Clayson Rd., Toronto 15, Ontario.**

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**ELECTRIC PRODUCTS COMPANY**

A DIVISION OF I-T-E CIRCUIT BREAKER COMPANY

"Keywall exclusively!" That's the decision of Victor DeSantis (right), vice president of The R. S. Ursprung Company. Vito DeSantis (left), job superintendent on the new Retread Plant of Firestone Tire & Rubber Company, agrees, as they inspect the job with Bob Scheurer, president, Lakewood Supply Company, local distributor of Keywall.

Keywall preferred by The Sam W. Emerson Co., Cleveland, for the Museum of Natural History, Cleveland. Approved by Garfield, Harris, Flynn & Williams, architects.

*Cleveland goes "all out" for*

# KEYWALL

## GALVANIZED MASONRY REINFORCEMENT

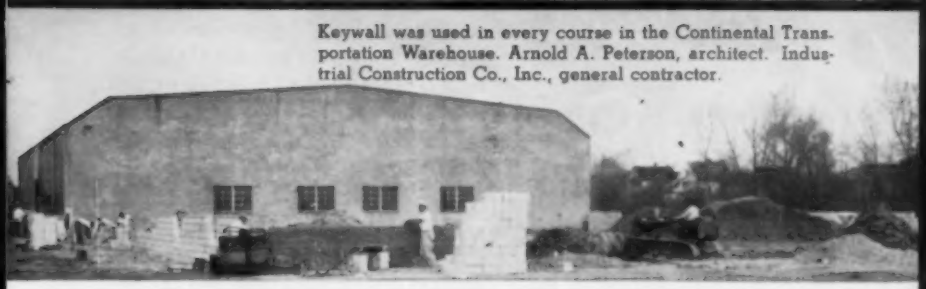
Keywall used exclusively in this large retail store of the May Co., Cleveland. Victor Gruen & Associates, Detroit, architect. Jack A. Bialosky, Cleveland, associate architect. The Sam W. Emerson Co., Cleveland, general contractor.

On this Warner & Swasey Co. warehouse, Keywall was used in alternate courses. Pilasters were on 16 ft. centers with expansion joints. Walls—18'-0" high. Joseph Ceruti and Associates, architect. The Leonard H. Krill Co., general contractor.

Typical Cleveland specification—Keywall in alternate courses. Olmstead Falls High School. Mellenbrook, Foley & Scott, architect, Berea. Barber, Magee & Hoffman, structural engineer. The Hoelzl-Martini Construction Co., general contractor.

Keywall takes over. On the Lamson & Sessions Factory, Keywall was tested against another masonry reinforcement. On the office addition, Keywall is being used. The George S. Rider Co., engineers. The Sam W. Emerson Co., general contractor.

Another Keywall job. Pick-'N-Pay Super Market. Weinberg & Teare, architect. H. W. Marcuson Builders, Inc., general contractor. Grajeck Construction Co., mason contractor.



Keywall was used in every course in the Continental Transportation Warehouse. Arnold A. Peterson, architect. Industrial Construction Co., Inc., general contractor.

# *Contractors prefer... architects approve...new type masonry reinforcement*

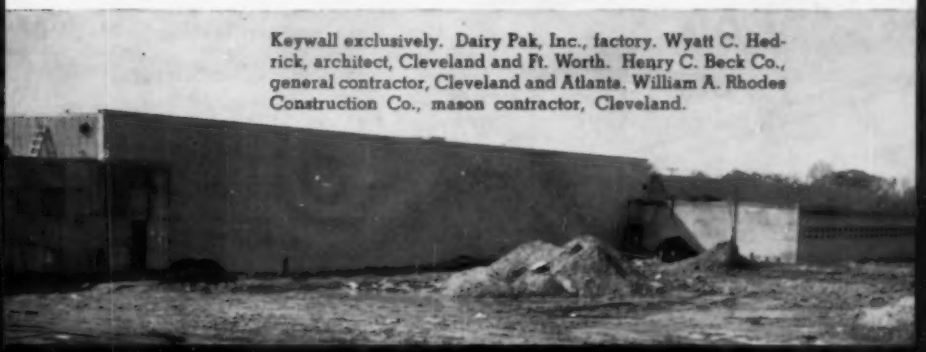
Visit the better masonry jobs around Cleveland. Go on the scaffolds. Talk to the bricklayers. Talk to the superintendents. Never before a reinforcement like Keywall, these men agree. Architects like it because they know that when masons like a product, *they'll use it*, and use it right.

Here are a few of the current jobs where Keywall is adding strength, reducing shrinkage cracks and giving greater value.

**KEYSTONE STEEL & WIRE COMPANY**
**Peoria 7, Illinois**

(Top) Keywall preferred and used. Westlake Christian Church. Travis Gower Walsh & Associates, architect. R. L. Williams, associate architect. Dunlap & Johnston Inc., general contractor.

Keywall used in alternate courses. Vermilion-on-the-Lake High School. Outcalt Guenther & Associates, architect. Tom Hume, general contractor.



Keywall exclusively. Dairy Pak, Inc., factory. Wyatt C. Hedrick, architect, Cleveland and Ft. Worth. Henry C. Beck Co., general contractor, Cleveland and Atlanta. William A. Rhodes Construction Co., mason contractor, Cleveland.

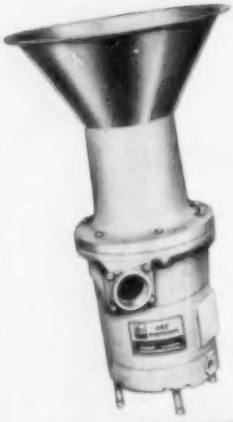
Keywall replaced wall ties on the Holy Ghost School. With glazed tile walls, Keywall was used in every third course. With solid 12 inch brick walls, Keywall was used in every sixth course. Nicholas Lipaj, architect. Leo W. Schmidt, general contractor.

An exclusive Keywall job. Lakeshore Hotel Cabanas and Pool. Snyder & Tekushan, architect. The Westwood Construction Co., general contractor.

Specify The JET DISPOSER with Confidence

BUILT FOR THE "LONG GRIND"

FMC JET DISPOSER



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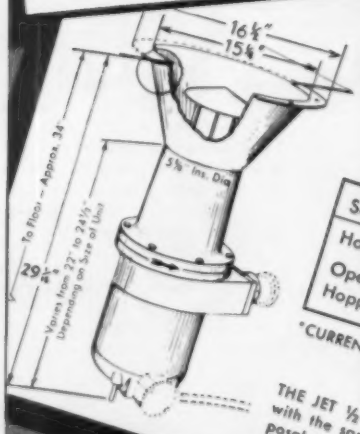


FMC JET DISPOSER STATISTICS

(Diagram to Left Gives Dimensions)

| Series No. | 44* | 55* | 66* | 77* | 88* | 99* |
|---|---|---|---|---|---|---|
| Horsepower | ½ | ¾ | ¾ | ¾ | 1½ | 2 |
| Opening Hopper | 5⅛" | 5⅛" | 5⅛" | 5⅛" | 5⅛" | 5⅛" |

*CURRENT: No. 44, 55, 115 volt, single phase. No. 66, 115/230 volt, single phase. No. 77, 88, 99, 208-220/440, three phase.

THE JET ½ H.P. DISPOSER AVAILABLE SOON—Built with the same rugged construction and efficient disposal action as the big JET. Inquiries welcome NOW.

We can only give you the JET story briefly here—but further data is yours promptly.

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# reviews

(Continued from page 210)

actually authored by a team of 25 experts. They have gathered into one volume most of the timber-construction knowledge worthwhile to the practicing architect or engineer. It is an excellent office reference and text.

The meat of the book is included in eight easily understood chapters. General design considerations are described and detailed design methods are illustrated for all the various types of structures, including trusses, arches, lamella roofs, piles, wharves, bridges, and others. Engineering methods and calculations are kept simple.

The final two chapters form a sort of appendix embracing a quantity timber-design table and four groups of design standards representing practices recommended by the lumber industry. The book is well printed and bound, with clear, understandable drawings and illustrations.

DONALD G. RADWAY
Project Engineer
Lockwood Greene Engineers, Inc.

### time, sand, and civilization

**Egypt: Architecture, Sculpture, Painting, in Three Thousand Years.** *K. Lange & M. Hirmer. Phaidon Publishers, Inc. 1956. Distributed in U.S. by Garden City Books, 575 Madison Ave., New York 22, N. Y. 362 pp., illus., $12.50*

Although the Western world has long acknowledged its debt to Ancient Greece—in the realms of architecture, sculpture, literature, and philosophy—it has not often enough given equal credit to Egyptian civilization, which not only influenced the direction of Greek sculpture and architecture, but also served as the seedbed for religious thought culminating in the Judaic-Christian tradition, and literary style pervading the Jewish scriptures. Kurt Lange, who together with Max Hirmer, authored the im-

(Continued on page 218)

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THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION
Sheraton Building, 711 14th St., N.W. Washington 5, D.C.

## reviews

(Continued from page 214)

pressive volume, *Egypt: Architecture, Sculpture, Painting, in Three Thousand Years*, does much to correct the notion that Egypt contributed no more to our cultural heritage than a valley of pyramids, a handful of sphinxes, primitive figure drawings, and an architecture ruined by a cult of compulsive wall scribblers. The wide sympathy and open-mindedness of the authors bring new life to their subject. Unlike the majority of publications on Egyptian art (which give us vague, scattered impressions), this volume binds text, photographs, and photo notes into a single rich experience. What is more, the coverage of Egyptian architecture, accomplished through well-chosen photographs and a supplementary section of plans, drawings, and notes, cannot be praised enough.

To modern man, the art of Egypt is filled with both strange and familiar elements. The authors explain this ambiguity by pointing out that Egypt is not only the "cradle of Western civilization" but also the graveyard of Stone Age civilization. Therefore, fullest understanding of her traditions would require exhaustive study of that previous era from which they were derived. It is in the Stone Age that we find the precedents for animal worship, divine chieftans, and an art that clung relentlessly to the walls. And it is in the Stone Age that monumental architecture was born; the fact that these early structures were related to religious beliefs and burial rites explains Egypt's long-lingering preoccupation with tombs and temples.

But, despite the 3000-year continuity of her artistic tradition, we would be mistaken to believe that Egyptian art lacked versatility. A galaxy of 244 photographs, some reproduced in color, indicates an amazing diversity of expression. We voyage from the most sophisticated

(Continued on page 228)

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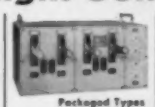

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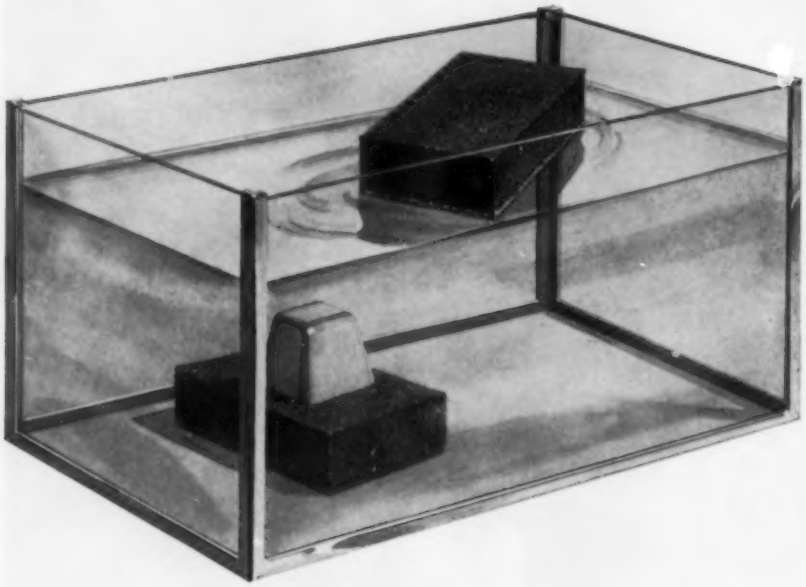

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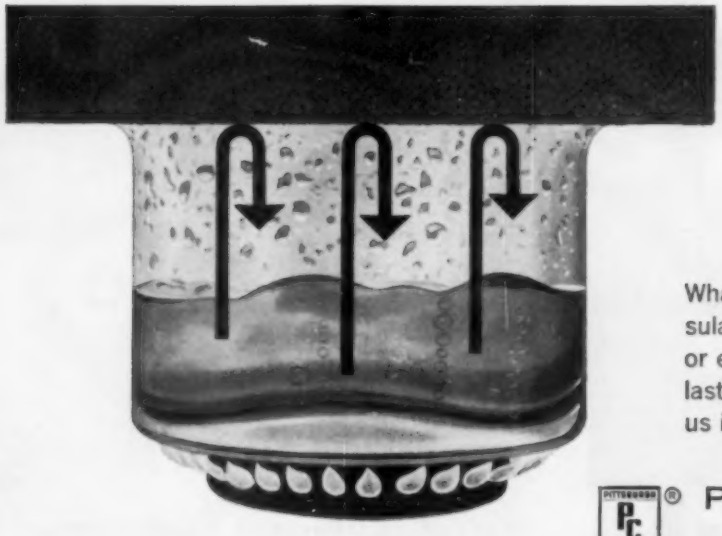

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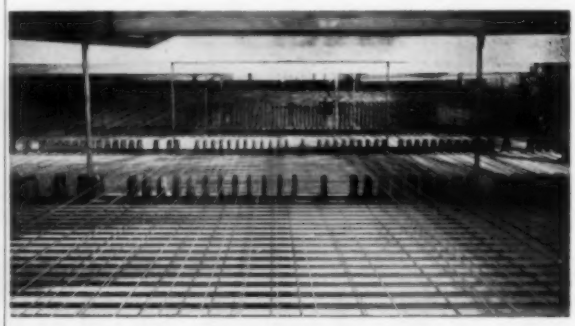

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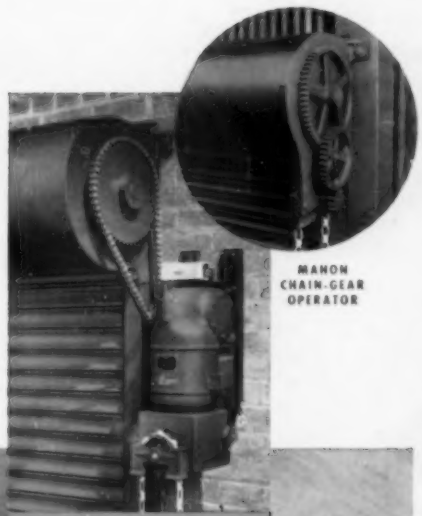

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**Primed ceiling surfaces**

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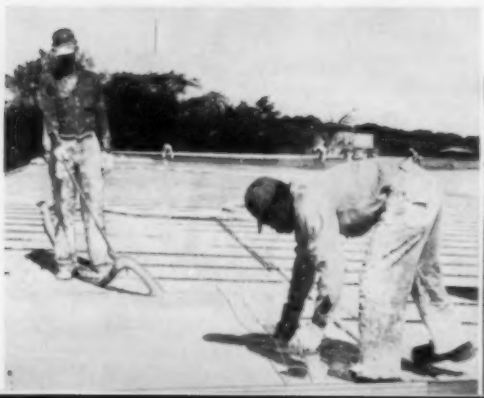

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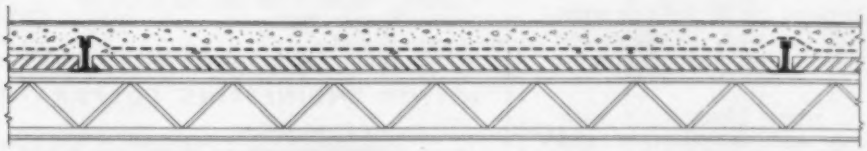

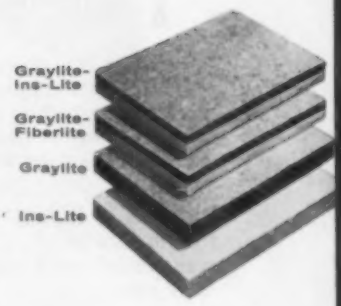


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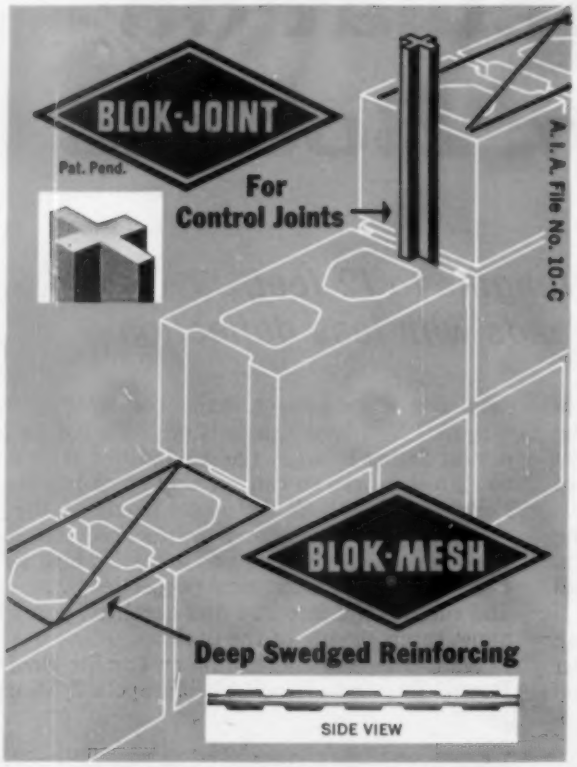


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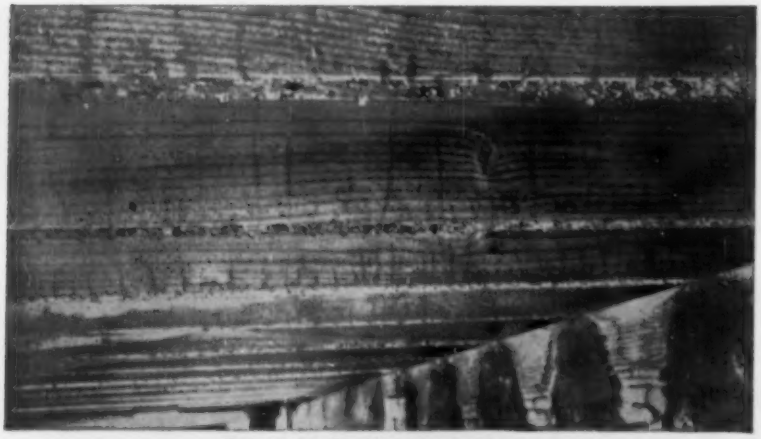

Condensation on floor joists above a crawl space

Cracked plaster ceiling due to condensation on the inside of a flat roof deck

Condensation in the wall caused framing to decay and plaster to crack


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## reviews

(Continued from page 218)

abstractions to a sensuous naturalism in style; we note the same level of skill and imagination in objects of diminutive and massive scale; we find figures drawn from life and figures of fancy. Ideas of life and death, precious and practical objects merge in the shadows of this prosperous material civilization, tempered with an age-old wisdom and the promise of an afterlife.

Although painting and sculpture in Egypt were a function of architecture and not single works to be viewed separately, one cannot help but observe the perfection in detail and proportion, the balanced composition, judicious use of color, and fidelity to material. The author notes that Goethe was impelled to compare the "basalt, black and severe" sculpture of Egypt with the "marble, white and charming" sculpture of Greece. So perfect is this art within its rigid limitations that we are captivated before we miss the dynamic spatial relationships of later periods. It was through these static, geometric forms—recalling the early mummy case and mastaba — that Egypt expressed in sculpture and architecture, a defiance of death, a yearning for immortality, and an utter indifference to time.

The esthetic delight of these works is even more amazing when we consider that the Egyptian attached as much importance to the symbolic religious-political-social content as to beauty — and perhaps this is the source of much of our impatience with Egyptian art. For, whereas we may regard their inscriptions as a naive intrusion upon our sensibilities (i.e. hieroglyphics around temple columns or across the sculptured figure), they regarded them as a means of reinforcing traditional values. (One might say that Egyptian literature, as the other arts, was integrated with her architecture —to its detriment and sometimes our displeasure.)

(Continued on page 238)

(Above) Demonstrating with a large sample section, Pennsylvania Bell Telephone Company School instructor explains to technician-students the basic principles of Q-Floor wiring. (Right) Members of the Q-Floor class become familiar with the product's advantages by wiring an actual installation in the classroom.

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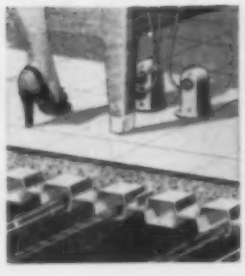

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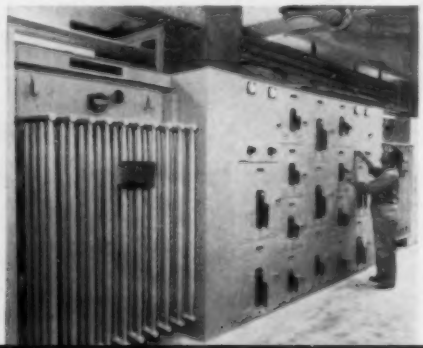
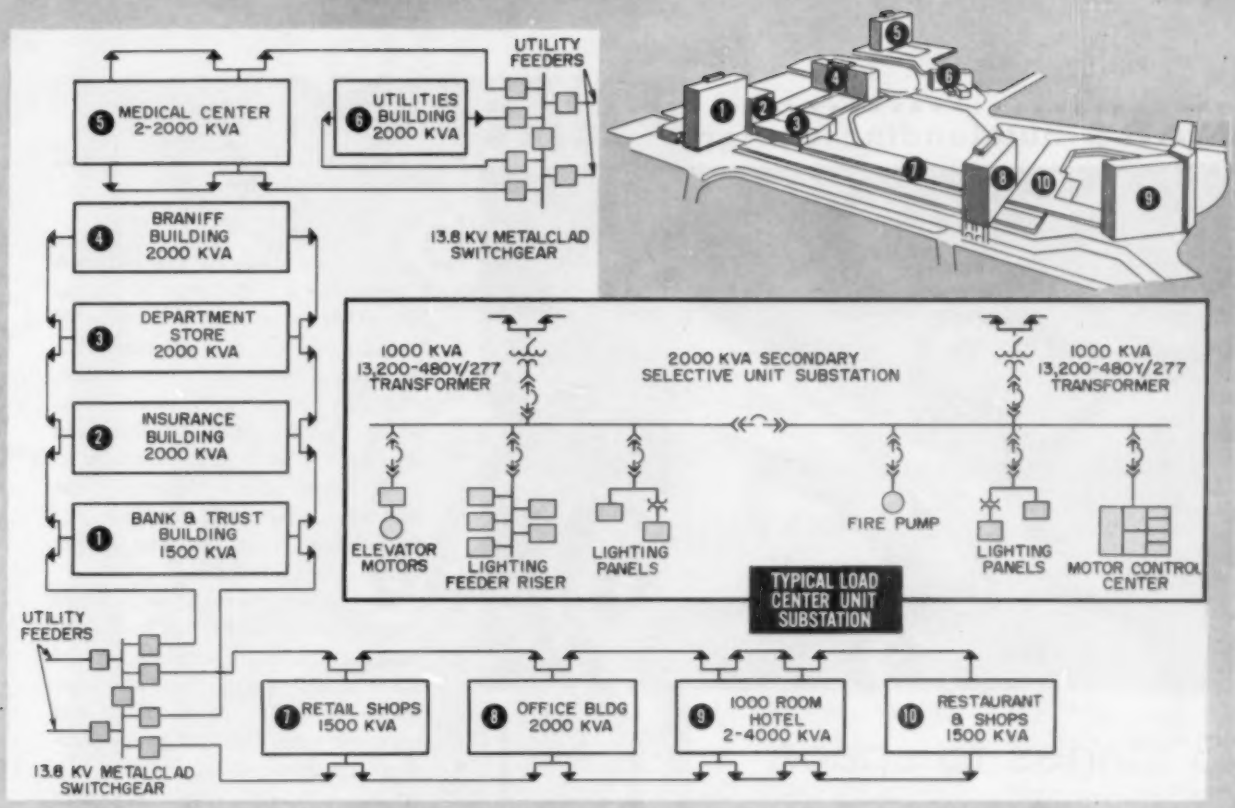


**1500 KVA** double-ended load center unit substation is typical of the units that will supply power in Exchange Park buildings.

**PROJECT POWER** is from two line-ups of G-E 13.8 kv metalclad switchgear. Unit shown is located in Bank basement.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6 UTILITIES BUILDING 2000 KVA
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13.8 KV METALCLAD SWITCHGEAR
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UTILITY FEEDERS
7 RETAIL SHOPS 1500 KVA
8 OFFICE BLDG 2000 KVA
9 1000 ROOM HOTEL 2-4000 KVA
10 RESTAURANT & SHOPS 1500 KVA
13.8 KV METALCLAD SWITCHGEAR

**FLEXIBLE, ECONOMICAL POWER** distribution system for entire Park Project is contained in one-line diagram. Numbers key equipment to Project buildings. Completed Utility Building also uses General Electric 480Y/277-volt equipment.

# serves power needs of "city within a city"

## $125 million Exchange Park Project in Dallas shows how General Electric's "system approach" is key to flexible, economical commercial power distribution.

To keep pace with the Southwest's vigorous economic growth, a $125 million commercial center is rising on 120 acres four miles from downtown Dallas. Known as Exchange Park, this community represents one of the most advanced city-within-a-city developments yet attempted in the United States. It is scheduled for 1960 completion. Nine major buildings, parking for 15,000 cars, 40-foot-wide air conditioned malls, 150 retail shops, and other facilities will enable shoppers to take care of every personal and business need in scientific comfort. Already completed: Exchange Bank and Utility Building.

**SELECTING THE BEST POWER DISTRIBUTION SYSTEM,** to satisfy Exchange Park's heavy load concentration efficiently and economically, required thorough system analysis early in project planning. G-E engineers, working closely with Mr. George M. Bostock, Vice-president and Engineering Manager of Exchange Park and his consultants*, recommended a 480Y/277-volt secondary selective system as optimum. General Electric also provided basic system layout, service engineering and installation assistance at the site.

**ADDED VALUES** stem from adoption of G-E system recommendations. Exchange Park's 13.2 kv distribution system has capacity for load growth. Secondary selective system features permit reliable operation. Utilization of 480Y/277-volt system means fewer, less-metal circuits and substantial dollar savings. Using 480Y/277-volt equipment in only two of nine buildings, for example, saved $90,000.

**GENERAL ELECTRIC SYSTEM ENGINEERING CAN HELP YOU** on your construction project. Call on G-E engineers early in your planning when they can be of greatest value. Contact your nearest G-E Apparatus Sales Office or write General Electric Co., Section 680-12, Schenectady 5, N. Y.

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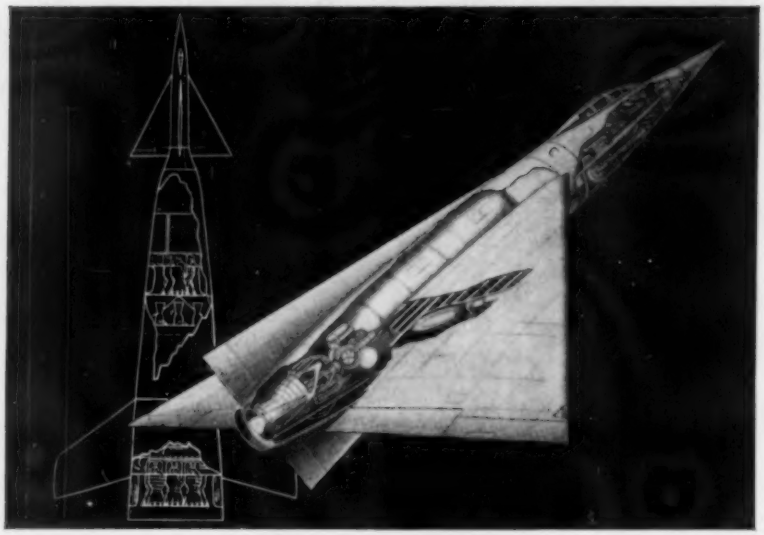

# 3 stages to space

The designs that will make news tomorrow are still in the "bright idea" stage today—or perhaps projects under development like this three-stage, two-man space ship. Drawn by Fred L. Wolff for Martin Caidin's "Worlds in Space," the rocket craft would start out as shown in the reverse drawing at left, shed its propulsion boosters in two stages as fuel is exhausted, and end up as the trim plane-like ship at right. Ship is planned to orbit a hundred miles above earth, return safely after one to two days.

No one knows what ideas will flower into reality. But it will be important in the future, as it is now, to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars—sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and — last but not least — the Mars-Lumochrom, the new colored *drafting* pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom colored *drafting* pencil, 24 colors.

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## reviews

(Continued from page 222)

But if we discount the religious aspects, the art of Egypt is not incompatible with our own way of thinking. Modern painters accept the canvas as a two-dimensional surface, while architects grow more concerned with building complexes and integrated planning; in addition, at least one notable architect of our time is an exponent of the "organic" approach to materials and design which Egypt developed.

The political organization of Egypt —with power and wealth concentrated at the head of state, in the hands of a divine chieftan who commanded a task force of artists and artisans—permitted long-range planning and monumental building. In our own time, each corporation with its factory and trained personnel is a small Egypt—enabling us to think in terms of expansive projects such as G.M. Technical Center, Ford Motor Center, and so forth.

However, the political structure of Egypt was translated into visual terms and expressed in wall painting. The Pharaoh (God) and Priest were pictorial images of power, surrounded by pictorial images of labor (servants, hunters, fishermen) —all of which are shown engaged in significant, religously symbolic activities. Power in our time is invested in an anonymous group; the political organization is depicted by graphs of lines and labeled squares. The oneness of the Egyptian political-economic-religious system is expressed in the vast temple developments at Karnak, Thebes, and Luxor. The design principles involved are universal:

First consideration was given to the site. A tomb inserted in rock or a temple ranging horizontally along the desert might well have inspired a Robie House or Taliesin. Next, the processional: a series of ascending courtyards lined with repetitive sculptural works, and entered through portals formed by magnifi-

(Continued on page 234)

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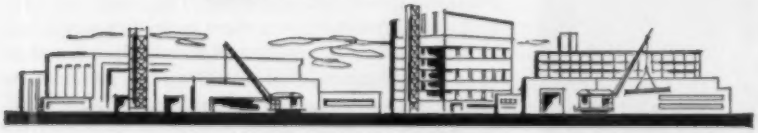

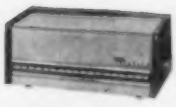

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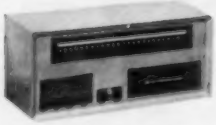

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## reviews

(Continued from page 232)

cent figures or pylons. This sense for the dramatic sequence with the addition of spatial effects is another element in the design vocabulary of Frank Lloyd Wright.

When we turn to individual details, such as columns, there are further principles to note. The strong, rounded forms reveal an intimate knowledge of the material's sensual qualities. And without imitating nature, the Egyptian echoed the world around him. From a forest of stone columns, the frozen lotus leaves, palm fronds, or papyrus umbels sprout in profusion—yet with what contrast to the severe geometry of the pyramids and pylons and at the same time with what harmony these divers elements are strung together and with what precision! Custom-cut stones, joined without mortar! The random-stone floors, the low-lying stone walls, the cascading columns, the repetitive ornament —all of these are familiar to disciples of Wright.

From Egypt, Greece inherited the tradition of organic-geometric architecture and its components: the column and pier; base and capital; astragal and flute; steps; wall niches; facade frieze; relief. But Greece was not hampered by an overbearing religious consciousness nor the protracted power struggle between state and religion (Pharaoh and Priest) which forever threatened Egypt's solidarity. Therefore it is to Greece that we ultimately turn in our seeking after perfection.

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# criteria for hotel design

by William B. Tabler*

Hotel design is a great challenge since it provides almost a complete cross-section of all properties: housing, in bedrooms; feeding, in dining rooms and kitchens; entertainment, in night clubs and ballrooms; rentals, in shopping and office areas; services, in laundry, valet, barber shop, beauty shop, and telephone rooms; maintenance, in carpentry, paint, upholstery, and machine shops; light manufacturing, in ice plants, bakery and ice cream rooms; and industrial, in power, refrigeration, incineration, and boiler plants —some even have medical departments with emergency rooms, *isolation rooms*, and laboratories. In reality, hotels are complete cities. Dallas Statler Hilton Hotel has a capacity of 10,000 people, The Palmer House 15,000, and The Conrad Hilton 20,000. The laundry in Dallas Statler Hilton is comparable to a commercial laundry for a city of 25,000, and the telephone switchboard in The Conrad Hilton has more equipment than would be used in a city of 35,000 population. No wonder it is a challenge!

On the other hand, hotels are treacherous. The money must be made out of the building. You are not selling soap or insurance and paying rent — you are selling the building. Hotels are a daily commodity that must be sold to the public every day. As with most businesses, the margin for error in hotels is very small, and disastrous mistakes can be made in planning, construction, operation, and maintenance. Examples of these failures are familiar to all, but it must be remembered that these failures occur not only during depressions but also during prosperity and even since World War II when hotels have had the greatest prosperity in their history. Little wonder that most people shy away from their construction. A Texan once told me

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* *Architect of Hotel Statler, Hartford, Conn.; Statler Hilton Hotel, Dallas, Tex.; Associate Architect, Statler Center, Los Angeles, Calif. Currently working on nine major hotel projects, including the $15,000,000 Pittsburgh Hilton Hotel; an addition to Brown Palace Hotel, Denver, Colo.; and International Hotel at Idlewild International Airport, New York. The accompanying text consists of excerpts from a speech Tabler delivered last Spring in Chicago before American Institute of Real Estate Appraisers.*

that it didn't take him many trips to New York to figure that there was something wrong, when he saw that everyone was building office buildings and not hotels.

In spite of all this, and increased costs, profitable commercial hotels can be built today, provided they are conceived as an integral part of their own operation rather than a shelter for housing the operation. The economies of personnel and maintenance will be "built-in" and planned into every detail. The functions, operation, and maintenance should shape the building and the architect act as the sculptor that shapes these requirements into a thing of beauty. It should not be conceived as a Grecian Temple, a Georgian Building, or a Modern Shell and then packed like a trunk with one operation after the other, as they seem to fit best.

I am listing a few basic "rules of thumb" for commercial hotels with full knowledge of the dangers associated with each. They serve only as a check to determine whether a project is feasible. To avoid static development, one must know how they are derived, as often it is the exception that proves the rule. Also, I am always in fear of having them used against me, as early this year a leading insurance-company mortgage-loan department took me to task on one of my own formulas—but fortunately, after some fast talking and rechecking of figures, the rule still held. Please accept these rules in the spirit in which they are given and remember that each rule influences the other.

1. ***Construction cost per room equals $1000 per $1 per room average rate.*** This can be quickly checked by preparing a prospectus and checking the market or competitive rates in the area. Assuming a $10 per room average, approximately $10,000 per room construction cost, including public and service areas, is all that can be spent. Hotels costing more than this must have other sources of income or be prepared to "go through the wringer" two or three times, as hotels have in the past. If you merely want to build a personal monument (for the sake of your heirs and future operators), buy the most expensive plot on Main Street and erect an *obelisk*. That will be less expensive and the operation and maintenance will be *nil*.

2. ***Bedroom floor areas should be equal to or greater than the total public and service areas.*** This is what kept Statler out of secondary cities that could not support a 1000 room hotel. Every time he went below 1000 rooms, he found that he could not reduce the public and service areas proportionately and the result was less profitable.

# Score high...

## *by SPECIFYING WESTINGHOUSE*

Architect—Aeck & Associates, Atlanta • Consulting Engineer—Charles F. Howe, Atlanta • Electrical Contractor—Brooks Allison Co., Atlanta • Distributor—Electrical Wholesalers, Inc., Atlanta.

Thousands of spectators will be thrilled by brilliant sports and pageantry in this beautiful new gym of the Alexander Memorial Physical Training Center at Georgia Institute of Technology in Atlanta. They will cheer athletes whose skills are at their peak, under light as "fast" as the games they play... with a high illumination level, free from glare or shadow.

Westinghouse lighting units are served by Westinghouse panels and control equipment, components of an all-Westinghouse electrical system. Read the details described on the following pages. DP-5030-A

Installation and wiring of the Westinghouse floodlights girding the circumference of the Alexander Memorial gym was simplified by the planning of this service balcony. It also provides convenient access for cleaning and lamp changes.

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## criteria for hotel design

Reductions must be realistic and must satisfy the requirement of the community and operation. Although most people think of commercial hotels as selling bedrooms, it may be surprising to learn that the "attendant facilities" (public and service areas) are responsible for 60% to 65% of the construction cost. This being the case, we have been reducing bedroom sizes in recent years to minimum or below, to compensate. On the other hand, motels and resort operations have eliminated "attendant facilities" (laundries, maintenance shops, food preparation, and all except a small "package" swimming pool) and consequently can provide bigger and (more costly) bedrooms. To the hotelman, it is glamorous to have the biggest ballroom, the biggest night club, and the biggest kitchen; but my own personal feeling is that it would be more profitable to have bigger bedrooms and less "crêpes suzettes."

3. ***One employe per room.*** Statler Hotels averaged one employe per room, but today we are trying to use less. In Hartford Statler, with 455 rooms, they have 370 employes and in Dallas Statler Hilton, with 1001 rooms, there are approximately 600 employes. The number of employes is determined not by operation but by basic design—the number of service kitchens, the methods of handling food and guests, and the maintenance are "built-in." Efficient operators' only choice in taking over inefficient hotels is to change the basic design, eliminate kitchens, and rearrange departments—but all this costs money. By this method, there is a limit where you can't afford to change. Some of the new hotels have opened with two or three employes per room; and even the most efficient operators have not been able to reduce them to one employe per room. The results are as might be expected.

4. ***Land cost equals 10% of building cost.*** Obviously the cost of the land is not the only determining factor regarding the site. In The Palmer House, with a million-dollar ground-floor shop rental, you can afford more expensive land. However, the basic rule still remains that the hotel itself, with a limited number of lobby shops, can only afford a land cost of approximately 10% of the building cost. The balance must come from other sources.

5. ***Operational results.*** Departmental profit may be anticipated at 70% on rooms, 50% on beverages, 20% on rentals, and 0% on food. Rooms are the chief income-producer but the hotel must have ballrooms, dining rooms, and function areas to be convention headquarters. The beverage laws have an important effect on the profit from a hotel. Rental profit is self-explantory, but food profit is very surprising. Most hotel operators and accountants try to show a small profit here, but usually you will find that the cost of the dining room, kitchen equipment and additional plant-costs are not reflected. Here again, the hotelman's dream of a huge ballroom, huge kitchen, and gay night club simply does not pay off.

6. ***Occupancy break-even point—60 to 65%.*** This is a very controversial figure. Operators of existing hotels say 85%, but the national average today is only 72%. Are most of them losing money? I think that all will agree that it *should* be 60% to 65%. The design should be arranged

so that when occupancy drops off, costs can be reduced proportionately.

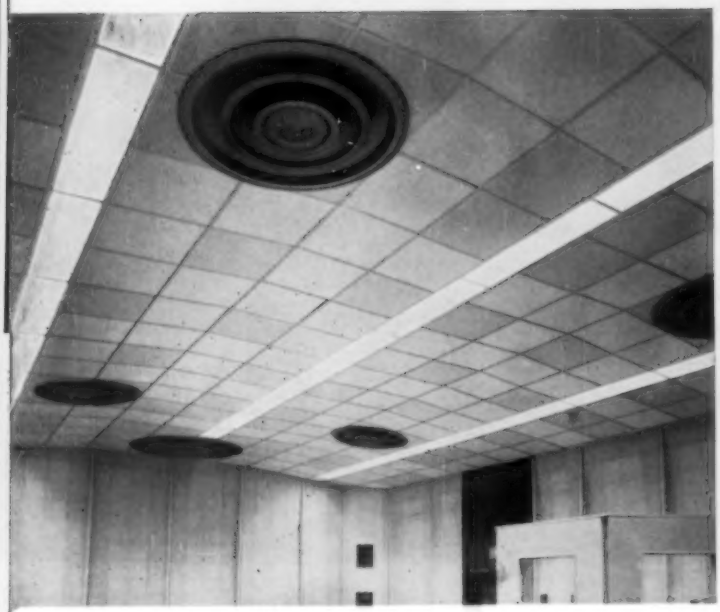
**7. *Miscellaneous.*** There are other more detailed "rules of thumb" that we use. The net bedroom area should be 50% of the gross typical-floor area. If two price ranges are required in bedrooms, at least a 20 sq ft differential should be made; since by actual mock-up and using the tricks of the trade to make a small room look larger and a large room smaller, it was found that a guest would not detect less than this differential. The minimum sizes of bedrooms are 90 to 110 sq ft for singles, 130 to 150 sq ft for doubles, and 160 to 180 sq ft for twins. There are also elaborate studies of sq ft income from the various sizes of rooms (and many others).

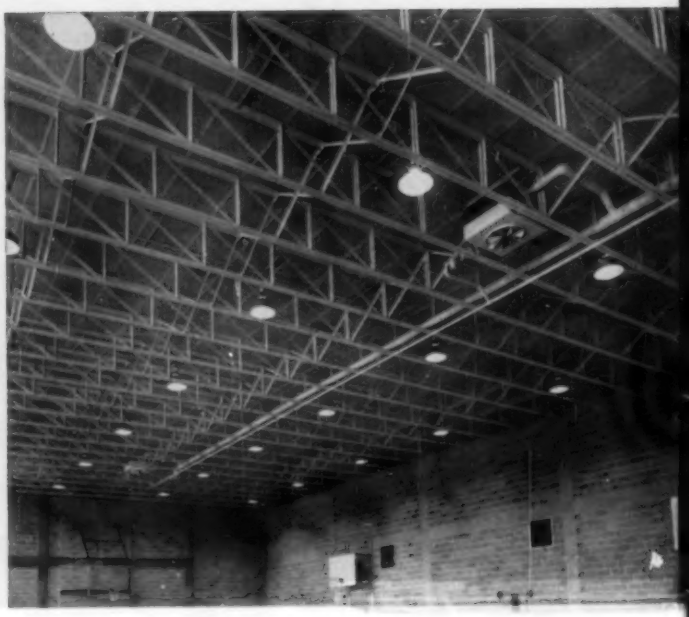
So much for rules—too many rules are "don'ts." Let's proceed with the "do's" and how you put these rules into practice.

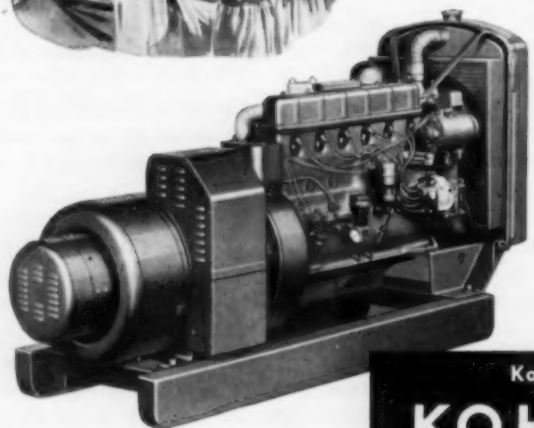
*Program*—The first step is to write a detailed program. While working for Statler Company, I spent many evenings during travel from one hotel to the other, measuring rooms, compiling statistics, and comparing one house with the other. On a new job I like as much information as possible, I like every comment, and I thrive on criticism. Unfortunately, you can't build a profitable hotel on the suggestions of some hotelmen any more than I could build an economical house for my wife with all of her ideas. I take all of the suggestions, lock myself up with my statistics, and formulate a program. On this basis I may make mistakes, but they won't be *far* off, for I know that there is a service bar in New York, a housekeeping department in Detroit, and so forth, that are operating efficiently with a comparable area.

*Schemes*—With all of the "rules of thumb" and a *Program*, there are still many solutions or schemes. Unfortunately, at this point you don't go to bed, have a vision, and wake up with the answer. To me, this is the most exciting part, but it is hell on the family. You must fight all preconceived ideas and let the hotel develop. At this point many, many new elements come into play—the site, environment, orientation, approach, esthetics, structure, foundations, soil investigation, and building codes. On the new Pittsburgh Hilton, we developed ten schemes and on the addition to Brown Palace in Denver, three schemes. We are in search of the most economical and straightforward solution which

## For Versatile, Efficient and







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DP-5030-B

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## criteria for hotel design

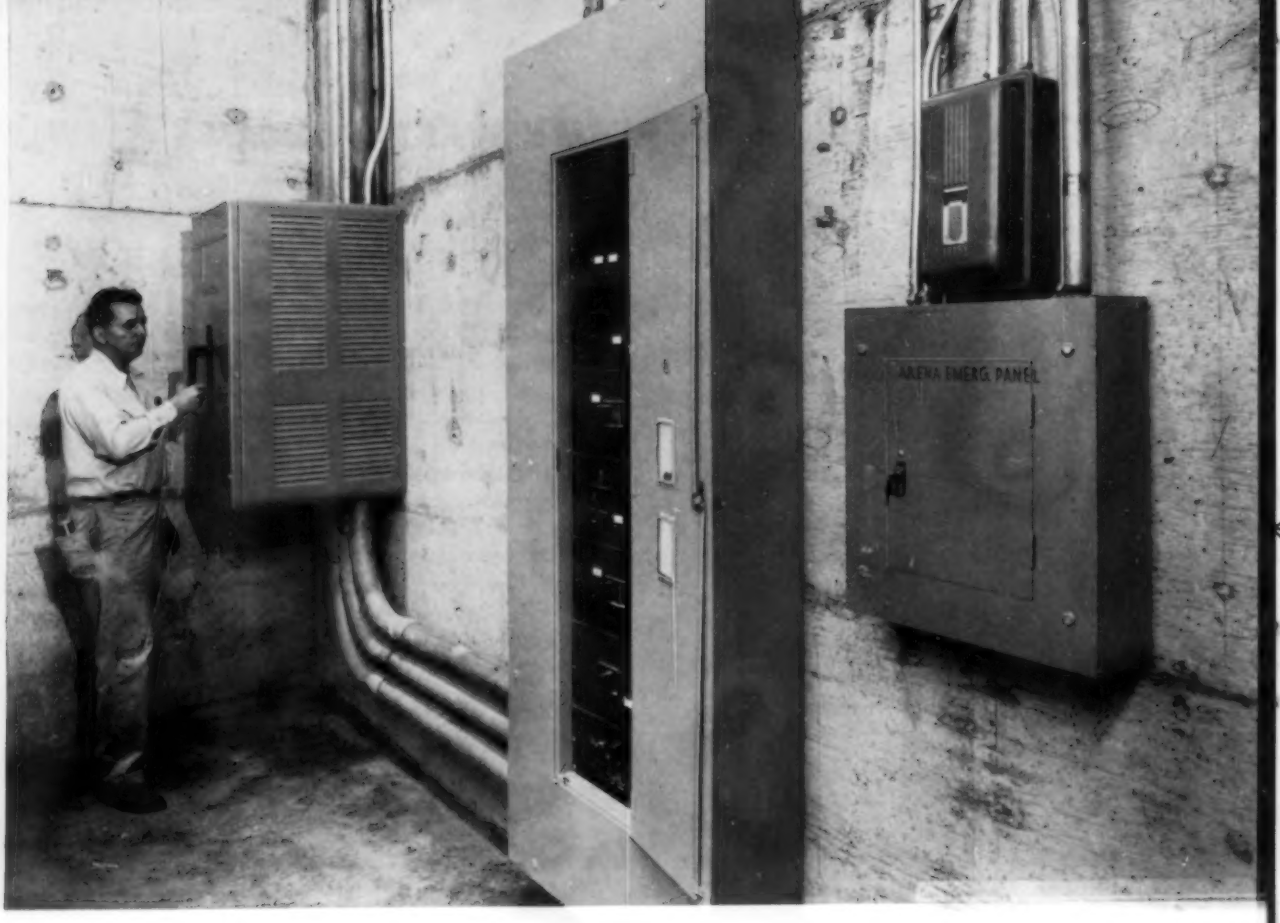
has a character of its own. We check and recheck each scheme and come up with our recommendation. There is still much more to be done to exploit the scheme from both inside and out, using space utilization, space relationship, flexibility, structure, and new developments. I was rather embarrassed on the Pittsburgh Hilton at this point, having worked on the project for two months and still not knowing what it was going to look like.

I will try to explain a few of the things to be done:

***Space utilization***—The bedroom is a simple example. Types of bedrooms must be settled; furniture layouts made; studio vs. conventional arrangements discussed; windows sized, and electric outlets located, all with the idea of improving on the past and developing new ideas. Another example is the bathroom. All of the details must be thoroughly studied. We will do anything that provides better service for less money. The flush valve is relocated into the pipe shaft to place it at a more convenient location, since it costs $5.00 less in rough brass than polished chrome. The towel hook is provided at a convenient location so that the guest will use a towel at an average of three times before throwing it into the hamper. The towel shelf is located so that the bath towels can be reached from the tub, so guests will dry themselves in the tub and save 50% on the laundering of bathmats. The light bulb is located for changing by the maid rather than the engineer, larger lavatory is provided instead of an additional shelf for toilet articles; special seat cover is designed for the water closet instead of a stool; radiant heat built in the floors in lieu of radiators; and the walls covered with 100 sq ft of tile so that tile setter can do two a day. All of this in a space 4'-10½" by 6'-7", which is less than the average home bathroom but ample for two people, with an inswinging door. I have talked for two hours on bathroom details and earned the nicknames, "Chick Sales," and "W. C." Tabler. If I can talk for this length of time on one little room, think what I can do with a housekeeping or engineering department!

***Space relationship***—Functional departments have definite relationships such as the flow of laundry from the bedroom, down a chute, through the laundry and housekeeping departments, and back to the floor; the bulk food being received, stored, processed, and served in an assembly-like operation; or the guest registry and rooming procedure. In addition, in public areas, spaces must have an esthetic relationship so that each area flows from one to the other; each space must be in harmony with another; interesting vistas provided throughout and one shape played against the other. By this same means, the building is tied to its surroundings, both inside and out. Without the functional space relationship, the building will not operate properly, and without the esthetic space relationship, it will be dull, uninteresting, and unattractive.

***Flexibility***—In the effort to reduce "attendant facilities,"



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public and service areas should be put to several uses. The ballroom in Hartford is a good example of this. Within a limited area, required functions had to be satisfied. To do this, soundproof movable partitions had to be developed. Working with the Fairhurst Company and the U. S. Department of Commerce Bureau of Standards, a double partition was developed. A sample installation was built in the Boston Statler between two private dining rooms, tested by the acoustical engineers from MIT and found to be the most soundproof partition in the room. The ballroom in Hartford was then subdivided to provide 12 different combinations of rooms for various sized groups (60, 120, 180, 190, 240, 830, 890, 950, 1010, 1030, 1110, and 1300). By scheduling, functions now could be handled which normally could be handled only by a hotel twice the size.

***Panel wall***—*Architectural Forum* gives us credit in Hartford for having the "first true curtain wall approved for any Class No. 1 building in the United States." Most of the metal-and-glass buildings are masonry and covered with metal-and-glass, such as the United Nations, Lever House, Alcoa, and Gateway Center buildings. In general, building codes permitted a glass window to extend down to the floor, but if it were replaced by an opaque surface, it was required to have masonry. In Hartford, we worked step by step, with the local authorities, established the window and wall area and gradually substituted a panel for some of the glass area. This type of construction could be justified only if the cost

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This Westinghouse Type WLAB lighting panelboard controls all of the balcony and overhead floodlights for the Alexander Memorial gym.

The power panel and emergency lighting panel shown here are part of the building's positive system protection through Westinghouse circuit breaker panelboards.

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was comparable to conventional construction. With a good face-brick-masonry wall, furred and plastered, priced at $4.85 per sq ft, we were able to build a wall for $5.00 using the same contractor that had built Lever House for $10.00 and the United Nations for $15.00. The real advantages were: the foot of space saved; less structure required to support the lightweight wall; and the wall had twice the insulation factor of masonry construction to reduce the air-conditioning tonnage to 480 tons, as compared with another 450-room hotel built after World War II, requiring 1000 tons. The wall has been very successful. We did have the contractor reputty it with a new glazing compound under his guarantee, but it has been watertight in spite of the fact most masonry people had hoped for the contrary. In 1955, during hurricane Connie, 9" of rain fell in New York in 24 hours, and we lost seventeen ceilings in the brick-masonry New York Statler. A couple of weeks later, during hurricane Edna, 13.77" of rain fell in Hartford in 24 hours. We lost no ceiling, but had five leaking-window calls and these windows only had to be locked.

***Structure***—With new developments every day, we try to take advantage of as many of them as possible. Since the structure represents about 20% of the construction cost, many are reflected in the structure. Following the approval of the lightweight-panel wall, it was no longer necessary to have the columns and beams in the outside wall to support heavy masonry walls. The columns were brought in from


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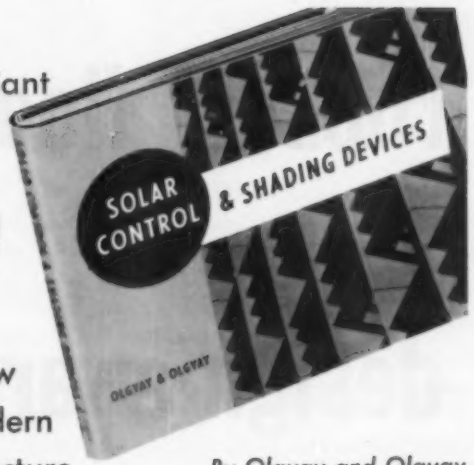


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the exterior and the lightweight exterior wall was supported on the edge of the slab. This cantilevered flat-slab construction was first used in a multistoried building in the Statler Hilton in Dallas. It reduced the number of columns and foundations by 50%, required no beams and used less reinforcing steel. We had only half the number of columns in the lobby, which always get in the way and have to be covered with an expensive marble. In the El Salvador Intercontinental, we took advantage of earthquake construction, which is usually costly, to eliminate partitions and reduce costs.

We have discussed the past and the rules derived from it, we have discussed the present and how we are using these rules; now, let's look into the future, for we are going to live the rest of our lives in it. We can't do anything about the past, but we can do something about the future.

Let's see how prepared we are for the future—even a year or two hence. Let's just discuss the "Jet Age." Most of us have read all about it, are calmly accepting it and *doing nothing*. For example, Pan American Airways, which is just one airline, has ordered 44 jet airliners with delivery to start next year. But, do you realize that each one of these planes carries as many people as the "Queen Mary"? The "Queen Mary" makes a round trip to Europe in 15 days and carries 1500 passengers each way, but each jet airliner makes 15 round trips in the 15 days carrying 100 passengers each trip or a total of 1500 passengers each way. Maybe the public would have been more excited if it had been told that Pan American Airways was launching 44 "Queen Marys" next year!

Hotels, by definition, are a product of travel. Foot-and-carriage travel developed the Wayside Inn; ship travel, our floating hotel and the luxury city hotels; railroads, the sleeping cars and the commercial hotels; automobiles, the roadside motels; and air travel is going to develop the world's greatest hosteleries.

Starting next year there will be a "Queen Mary" headed your way. Are you prepared to receive it? For remember this "Queen Mary" doesn't have sleeping, feeding, and entertainment facilities. With the fast air travel, more time will be spent at the destinations. The port of entry and embarkation cities will no longer

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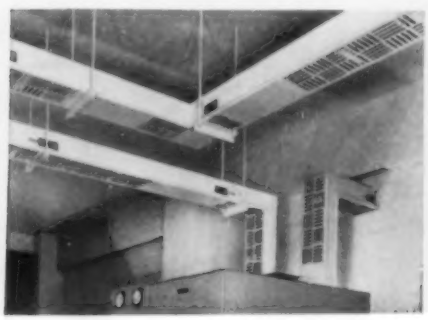
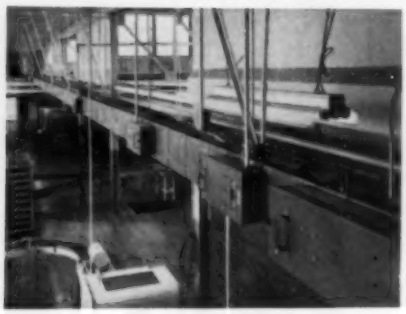
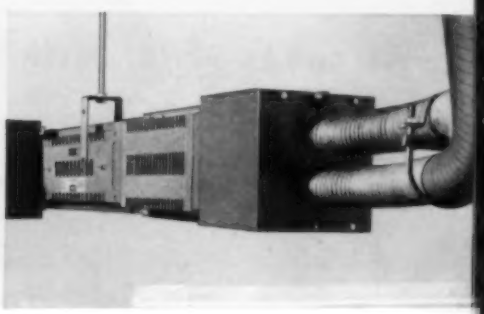
Left: Typical installation of low-impedance bus duct. Center: Conventional plug-in bus duct with power take-off receptacles located every 12 inches for convenient power use. Right: New Uni-bus flexible connector makes every job fit without difficulty. Far right: Demonstration of safety interlock that keeps live bus covered until plug-in wiring is complete.







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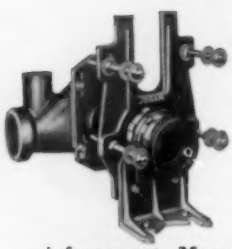

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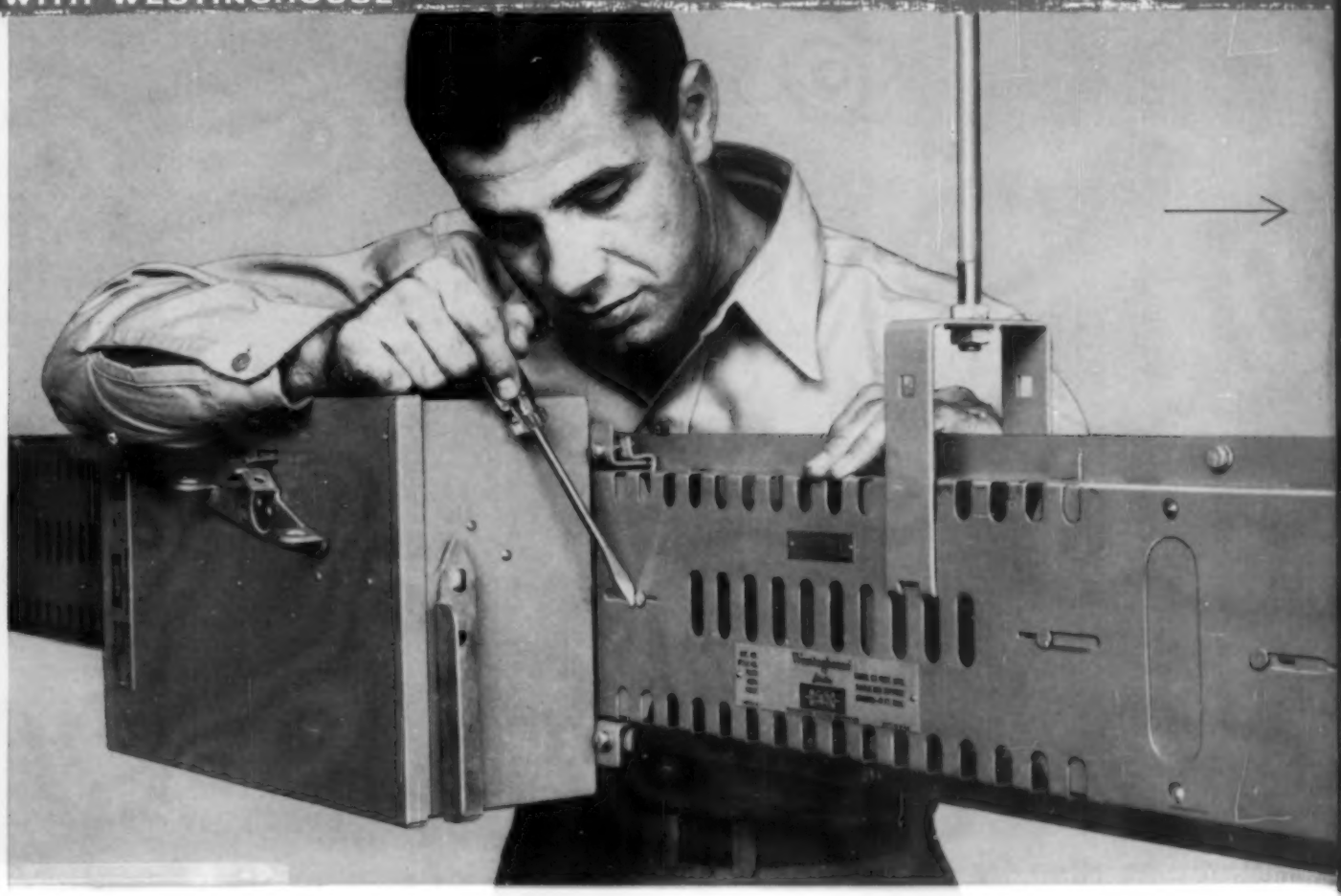
just be located on the coast, and will get these travelers both ways. Each hotel will be a showcase and each city and country will be the host and judged accordingly by these travelers. If you are not prepared, you have problems. We are faced with the greatest hotel-expansion program that this world will ever see. To build a hotel takes from two to five years (and some even 10 years, when you consider all of the phases, such as land acquisition, planning, financing, construction of building and utilities, training, and staffing). Every one of these phases is a very sizable job. If trained personnel are not readily available, they are going to have to be trained. Utilities providing electric power, water supply, telephones, and drainage, as well as roads will be needed—and these cannot be built overnight. The new hotels, of course, are only part of the whole new era in the world.

Now are you ready to discuss the "Rocket Age" which is going to follow? I am currently doing plenty of thinking in this direction. My satellite-hotel plans have not been formulated, but I can tell you that the



view from the cocktail lounge is going to make the "Top of the Mark" look like nothing at all and Frank Lloyd Wright's proposed mile-high office building look like a toothpick. In fact, I'm not too sure that you will even be able to see it. My children want me to be sure to include a swimming pool—at present, I don't believe it is possible, but I hope to have equipment similar to that worn by skin divers so you can get out and float around a bit. You may think this is fantastic, but the future is unlimited.

Are we really living in the future or even prepared for it? Are we as badly prepared for these travelers coming next year as the airports of some of our principal cities of today? Those of Chicago and New York are a disgrace. Can we keep up with this rapid expansion or are we going to bungle the job and follow the policy of "litter and leave" to develop future slums. We have a challenge. Let's tackle the problems and may God give us strength and wisdom to do a creditable job, so that when the future looks back it can say "this was our greatest age."

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Bruce
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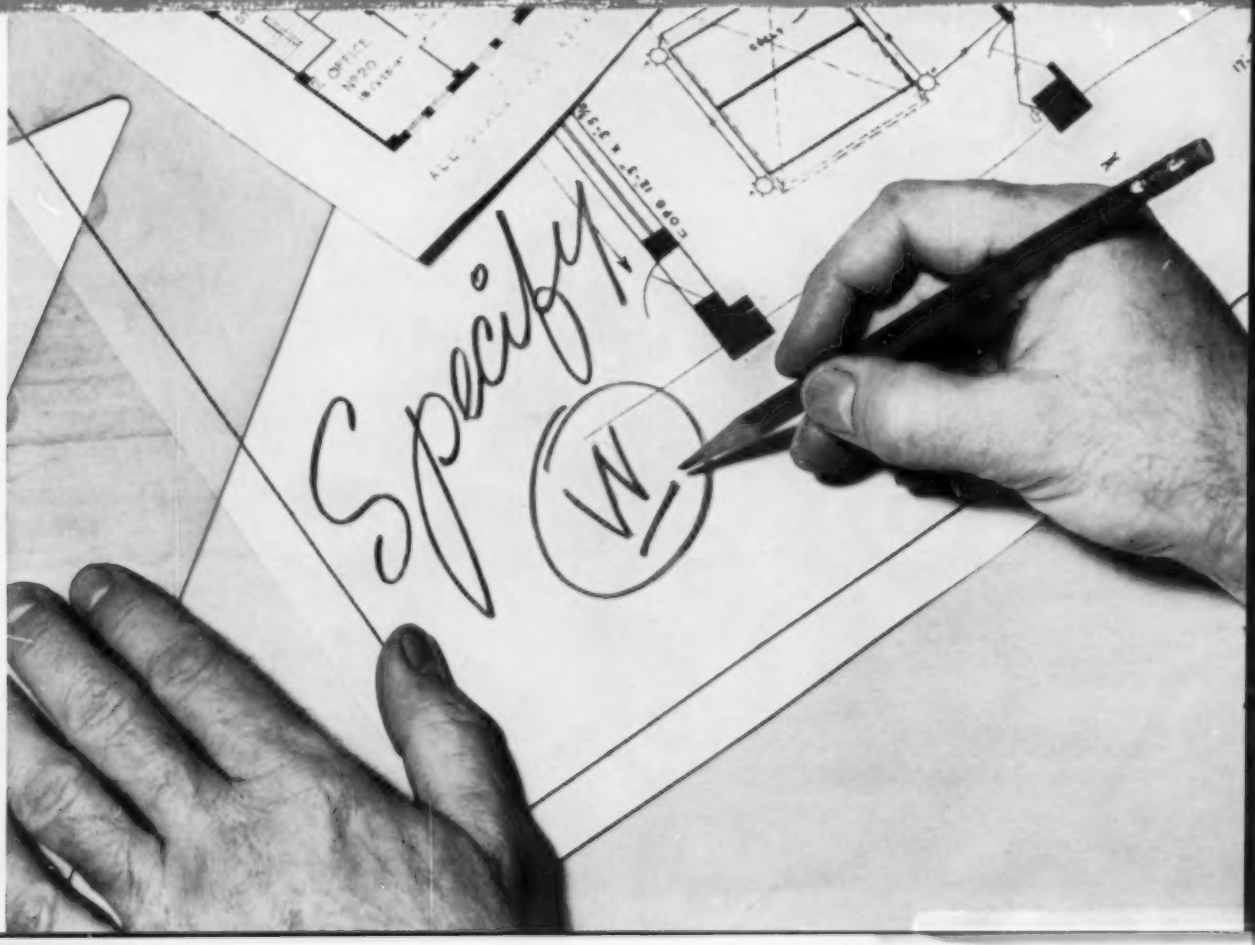
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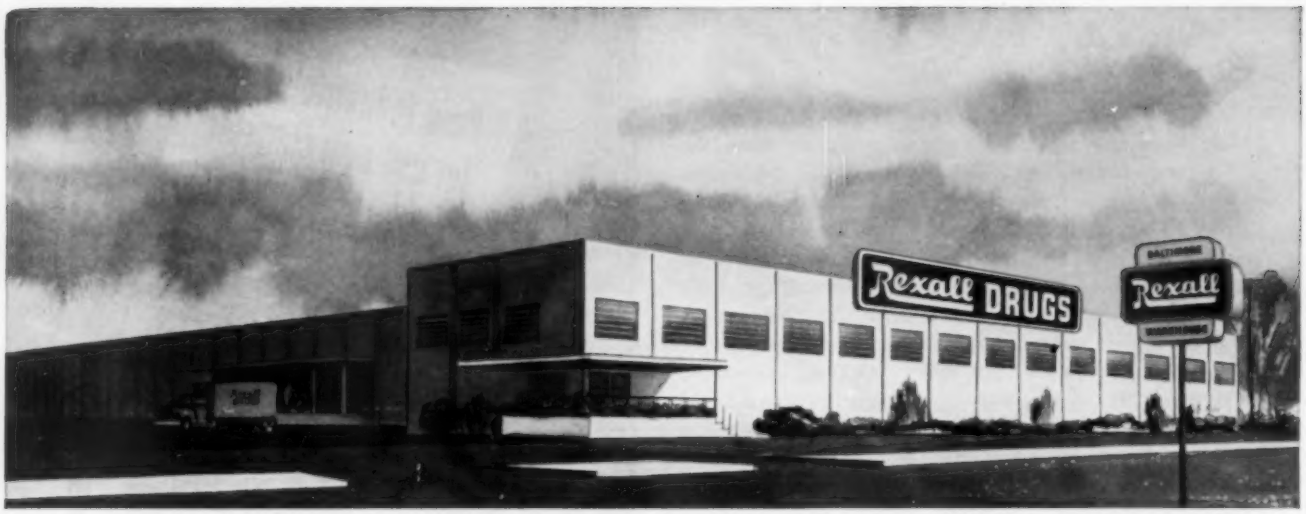


Warehouses in Boston, Mass., Baltimore, Md., Columbus, Ohio, and San Leandro, Calif., contain over 365,000 sq. ft. of 24-gage Tufcor.

# Why Rexall chose 8½ acres of TUFCOR®

EXPANDING to give better service, handle more volume and cut marketing cost, Rexall Drug Co. is now erecting a series of spacious one-story warehouses across the U. S. The roof system chosen for four of these new buildings is Tufcor tough-temper steel deck and lightweight insulating concrete with a built-up roof. Why Tufcor? Because galvanized Tufcor offers a strong structural deck for insulating concrete, is quickly and easily applied, makes possible a lightweight, low-cost roof system with positive vapor barrier and maximum fire safety. Read what members of Rexall's building team say about this modern roof system. In their comments below, you will find many reasons why Tufcor may be the one right roof system for your next job. Like more information? Mail coupon at right for free Tufcor product manual.

REXALL CHIEF ENGINEER J. E. Deal says, "The positive fire resistance of Tufcor with insulating concrete means savings on sprinkler heads. We also save several thousand dollars on each job by not having to paint the galvanized underside of Tufcor. Sheet corrugations fit together nicely, which means placing is fast and easy. Tough-temper steel makes Tufcor flexible yet strong. Availability of Tufcor is also good. Two weeks from the day I ordered sheets, they were on the way! On the Columbus job, we placed and welded 98,200 sq. ft. of Tufcor in just 7 work days."

ARCHITECT-CONTRACTOR REPRESENTATIVE on the Baltimore job, E. L. Wieringa of Indenco, Inc., says, "Tufcor installation is fast. Sheets are light and easy to handle. Square-foot coverage is good. By covering two spans with a 14′ sheet, we were able to weld a sheet to 3 joists at one time. Spot welding is a snap and Tufcor is safe to walk around on. These sheets hold the entire building together. They transfer thrust, give a lot of lateral strength and develop a good diaphragm. You notice it the minute you weld sheets down. Tufcor strength is a wonderful safety factor."

CONCRETE APPLICATOR on Baltimore job, R. C. Bollinger of EVA, Inc., says, "This was our first experience with Tufcor but in a couple of days my crew was operating efficiently. Tufcor is easy to place and weld. We got 12,000 sq. ft. per day from a four-man crew. Sheets are cut to fit building frame. We eliminated double handling by placing them directly from a mobile buggy. With Tufcor, you walk around as freely as you do on the ground—no planking is needed. We've poured insulating concrete over other systems but Tufcor is easier and structurally stronger, helps keep labor costs down."

Exposed Tufcor ceiling in Baltimore warehouse. Attractive galvanized Tufcor requires no field painting, assures building permanence.

# roof system for new warehouses

EASY TO PLACE. Tufcor sheets arrive at the job site bundled and cut to fit framing. No measuring or cutting is needed! After sheets are plug-welded in place, they provide a strong structural deck and a convenient work platform for trades. In the finished roof system, Tufcor acts as a vapor barrier, keeps insulating concrete dry so it maintains its insulating properties, saves on costly fuel bills.

EFFECTIVE INSULATION. Inert insulating concrete is one of the most permanent, desirable types of roof insulation. Rigidity of Tufcor system provides a firm base for built-up roof. Low dead load of finished Tufcor system is 4 to 6 psf less than most types of roof construction, requires less structural steel. Permanence, low maintenance of system plus low insurance premiums assure savings to owners.

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Project being studied_____

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**SASH BALANCES**
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# p/a views

(Continued from page 25)

the same pattern for the entire set of specifications and, usually, begins with the succinct statement that the brands named and no other will be acceptable. No consideration will be given to request for substitution of other brands. The names of two, three, or more manufacturers are mentioned. The words "or equal" are deleted. As a rule, one of the brands named will be listed as follows:

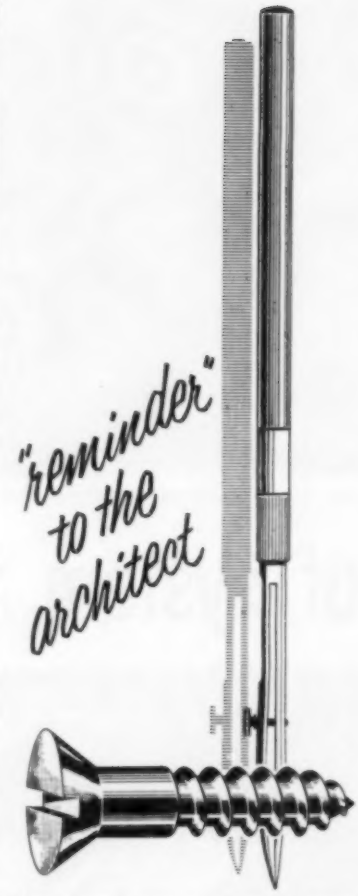
> "*EXTERIOR WOODWORK:* One coat, Joe Doakes Company, A-1, primer; Two coats, Joe Doakes Company, A-1, house paint."

The product thus named is intended to serve as a guide as to the standard of quality expected from the other names previously mentioned. If the contractor should select someone besides "Joe Doakes," the architect furnishes a complete list of that manufacturer's product. The contractor who reads this type of specification has no alternative but to select one of the brands mentioned. If he persists in submitting anything else, the architect is under no obligation to consider it for the job in question and a simple form letter can suggest that the contractor reread the specifications. There is no question about the restrictiveness of this specification but it has its value in eliminating the involvements encouraged by the previously discussed methods. The architect is free to devote his energy in some other direction.

The "*tight*" group is small and the theory behind its method is simple: only one brand is mentioned, followed by the words "and no other." The listing of products is the same as that of the "rigid" group except that no other lists are provided since no other products can be used.

The contractor is in an impossible situation when it comes to requesting a substitution. No provision has been made for such an act and he has to use the product named. The

(Continued on page 252)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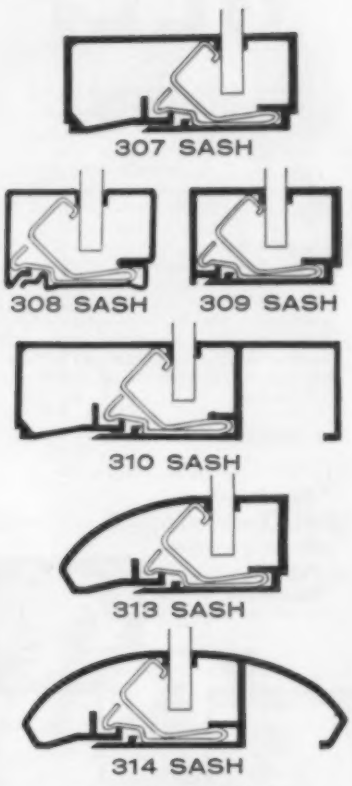


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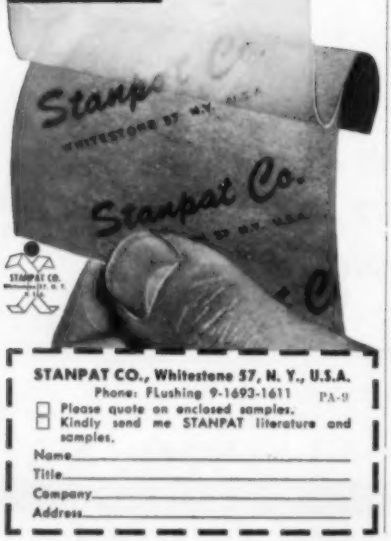


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☐ Kindly send me STANPAT literature and samples.

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# p/a views

(Continued from page 250)

architect has no reason to be disturbed in his office by contractors, although competitive salesmen will be paying regular calls to be included.

While this firm and restrictive method assures the architect of getting precisely what he wants, it is not commonly accepted. Except in rare instances, the architect, in his desire to be impartial and fair, will list more than one product.

None of the four groups is wholly perfect but one stands out as most agreeable to contractor and architect from the standpoint of offering a selection and good business practices. More and more architects have been adopting and testing the method advanced by the "rigid" group and are finding it highly satisfactory. It has, in effect, declared that the architect has predetermined that the products he has named are equal in quality, price, and durability and that he considers them equally desirable in fulfilling his professional obligation for the creation of a design and a completed structure.

JOHN A. POPE
Representative, The O'Brien Corporation
Washington, D. C.

### comprehensive manual

*Dear Editor:* Under separate cover I am sending our best response concerning paint specifications. This is our *Architect's Paint Specifications Manual* for commercial and residential painting, a somewhat more detailed treatment than usual, I believe you will agree.

It is certainly more comprehensive than that which is provided the architect in *Sweet's Catalog*. You might be interested in obtaining, if you have not already done so, the compilation of specification literature made by the National Paint, Varnish and Lacquer Association and made available, I seem to recall, to the AIA.

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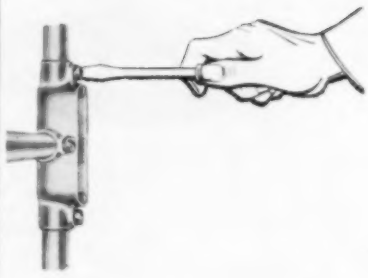
**WRITE KILLARK SPEEDOLETS IN YOUR THINWALL CONDUIT SPECS . . .**



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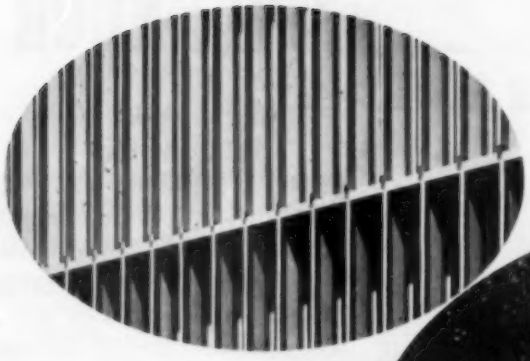

LEMLAR adjustable louvers (type VJ-24) were chosen to dramatize this new home of the Raleigh (N. Carolina) NEWS and OBSERVER and The Raleigh TIMES.

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**Operating, Maintenance Expense Reduced Annually More Than 25 Percent!**

**AIR CONDITIONING** equipment cut $15,000 and a $2,000 saving on interior blinds made "first costs" exactly even. Important, too, is the "from now on" operating economy. Operating expense of the air conditioning system is reduced by 25% and maintenance of interior blinds eliminated altogether!

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See Sweet's Architectural File, 19e/Le; Industrial File, 7f/Le. Or write for product Catalog and further data. Sun Angle Charts for your locality also available on request.

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**Builder:** Strong and Harmon

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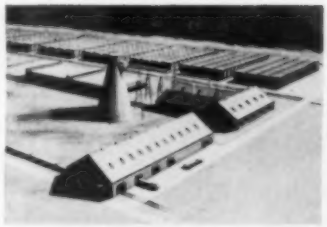
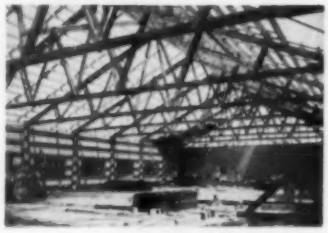
FOR TIMBER — ENGINEERED BY **TECO**





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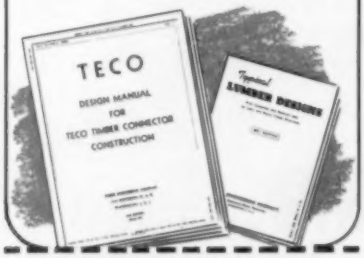
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LEONARD S. PARKER and ROGER T. JOHNSON, Architects, 720 Washington Ave., S. E., Minneapolis 14, Minn. Firm will be known as PARKER & JOHNSON.

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(Continued on page 258)


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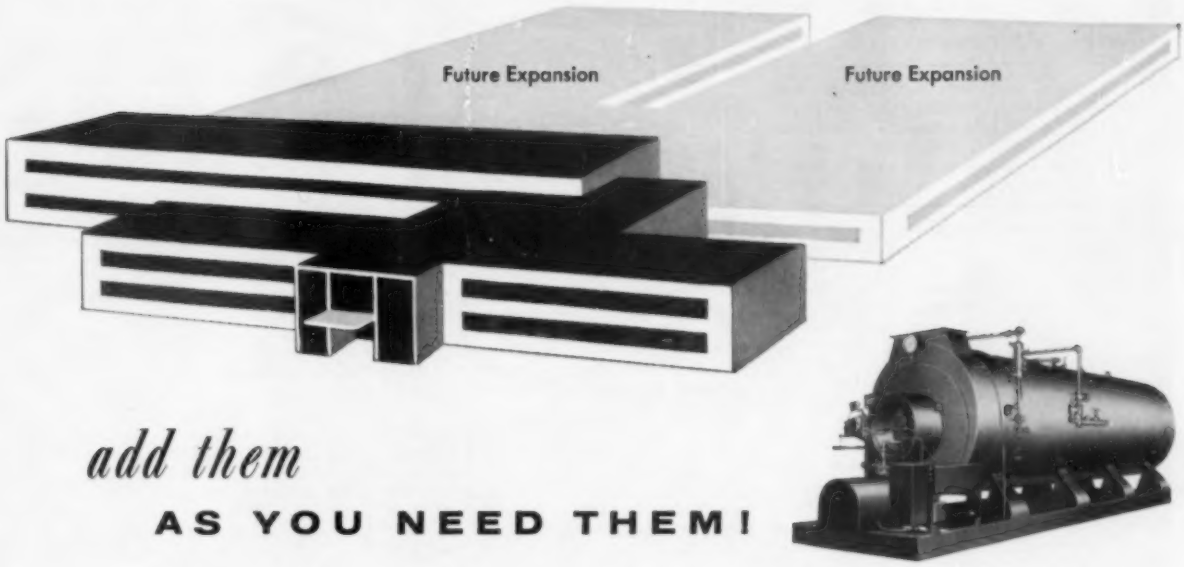


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Only Cyclotherms lend themselves perfectly to a *progressive* increase in steam capacity. You can get them in 17 sizes — add units ranging from 18 to 750 HP. They're installed easily — need no stack, no excavation, no special foundation. A battery of Cyclotherms is easy to accommodate — a Cyclotherm takes up to 1/3 less space than even other package boilers. Completely factory assembled, too — set one down and with five simple connections it's ready to work.

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And Swan plans to install during 1957 another 500 HP, another 125 HP and a 30 HP Cyclotherm. In 1949, Swan planned for the future with Cyclotherm. You can plan for your future with Cyclotherm today.

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# p/a jobs and men

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ARCHITECTURAL DRAFTSMAN—do you want to get away from the drafting board and advance to the position of sales engineer? AllianceWare—pioneer producer of porcelain-on-steel plumbing fixtures—needs a man with architectural drafting experience who can talk the language and promote AllianceWare's new line of P/E Curtain Wall in the Chicago area. If you can qualify, send your resume, salary requirements and recent photo to AllianceWare, Inc., Box 809, Alliance, Ohio.

DRAFTSMEN-ARCHITECTURAL—top notch aluminum sash and curtain wall detailers. Prepare shop drawings for established firm in Detroit. Top salaries in this field. Fringe benefits, life and hospitalization insurance. All replies strictly confidential. Send resume of past experience to Box 545, PROGRESSIVE ARCHITECTURE.

*(Continued on page 260)*

### Advertising Rates

Standard charge for each unit is Five Dollars, with a maximum of 50 words. In counting words, your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for ten dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Jobs and Men, c/o Progressive Architecture, 430 Park Avenue, New York 22, N. Y. Insertions will be accepted not later than the 1st of the month preceding publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.


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INCINERATOR

BURNS 750 LBS. OF MIXED REFUSE PER HOUR... AT DALLAS' NEW STATLER HILTON

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See Our Catalog A1A-35-J-41 in Sweets 26 A — G

*Jet engine test cell — inner and outer sets of double Jamison Sound Reduction Doors minimize extremely high sound levels.*

# Jamison "mass principle" of sound reduction proven superior in recent tests

Tests conducted on Jamison Sound Reduction Doors by a nationally recognized laboratory, have shown conclusively that Jamison's weight per unit area is the main factor in effectively minimizing sound transmission through a structure.

Tests conducted in accordance with "Recommended Practice for Laboratory Measurement of Airborne Sound Transmission Loss of Building Floors and Walls" No. E 90-50T, ASTM, proved conclusively that these doors provide an average sound reduction of 50 db. for single doors, and 49 db. for double doors. Tests were run over 11 different frequencies ranging from 125 to 4000 cps.

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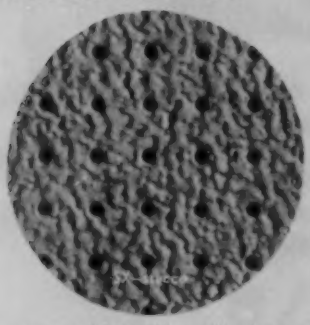

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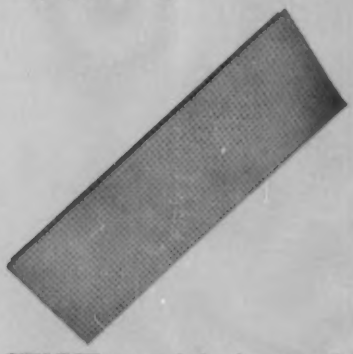
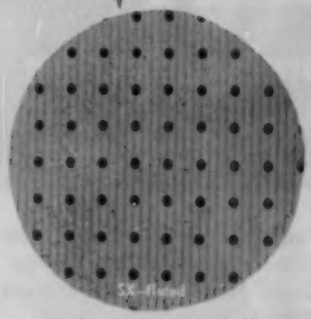


CEILECT textured aluminum panels are available in **permanent,** natural and color anodized finishes. They are square edged for almost invisible fine line joints and come in sizes 12" wide by up to 36" long.



For sample squares and literature send to Simplex Ceiling Corp., 552 W. 52 St., New York 19, N.Y.

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Please send me sample squares of CEILECT textured aluminum acoustical ceiling panels.

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# notices

(Continued from page 254)

**p/a congratulates . . .**

MONROE W. POLLACK, Vice-President of UNITED STATES PLYWOOD CORPORATION, New York, N. Y. appointed Director of Sales.

J. W. OWENS, appointed Commercial Division Sales Manager of FLEET OF AMERICA, INC., Buffalo, N. Y.

HENRY R. PATAKY, named Director of Sales for NORMAN PRODUCTS CO., Columbus, Ohio, manufacturers of heating and ventilating systems.

ROBERT C. TURNER, appointed Director of FACING TILE INSTITUTE, national association of structural-clay facing-tile manufacturers, by Pres. J. CARVEL TEFFT. Turner will maintain his office in New York, N. Y.

RICHARD J. GOTTAS, DEAN M. HANCHETT, and DONALD W. REED, have been named Architectural Consultants in the Midwest, Southeast, and West Coast, for RODDIS PLYWOOD CORP., Marshfield, Wis.

PAUL W. KERR, former President, new Board Chairman, and KEATOR MCCUBBIN, named President of HENRY WEIS COMPANY, Elkhart, Ind., plumbing supply manufacturers.

A. D. BLACKWOOD, President of BRIGGS MANUFACTURING COMPANY, on the opening of a new plant, general offices, and display room at 6600 E. Fifteen Mile Rd., Warren, Mich.

W. LEON HARPER, newly appointed Manager of Sales for Industrial Products and Tile-Tex Divisions of FLINTKOTE COMPANY, New York, N. Y.

J. FREDERICK TUKE, appointed Sales Manager of the Engineered Systems Division; MUNRO RADFORD, appointed Sales Manager of the Equipment Division, and SY RICHMAN, new Advertising Manager for AUTH ELECTRIC COMPANY, INC., 34-20 45 St., Long Island City 1, N. Y.

(Continued on page 262)


Onan ELECTRIC PLANTS

ELECTRIC PLANT NEWS

# Power outages can do no harm in this hospital

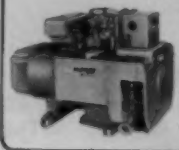
***Onan Electric Plant supplies emergency power for lighting and all vital electrical equipment***

An Onan Emergency Power System protects patients and personnel. Supplies current for lighting corridors, operating rooms, delivery rooms, stairways; provides power for heating system, ventilators, elevators, X-Ray machines, and other vital equipment.

Your hospital is assured of electric power at all times with Onan Emergency Electricity. *Operation is completely automatic.* When highline power is interrupted, the plant starts automatically; stops when power is restored.

Models for any size hospital—1,000 to 75,000 watts A.C.

**Complete standby systems at lower cost**



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Penn Metal is putting 88 years of experience behind its facilities for the production of STEELDEK. This means architects and engineers can look to a new, dependable source of light roof decking —reflecting traditional Penn Metal quality.

New folder SS-21 gives physical and structural properties, safe uniform loads, dimensions and erection details. Send for your *free* copy today.

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PM-156

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*a name to remember*

# p/a jobs and men

*(Continued from page 256)*

ASSISTANT ELECTRICAL ENGINEER—$559 to start. To meet the requirements of an expanding program, immediate appointment will be made to this permanent position located in an excellent architectural office. The person appointed will design electrical systems for various projects in the planning and construction of County buildings and other structures. Applicants should have a B.S. in E.E. or equivalent experience; plus 1½ years' responsible electrical engineering experience. For complete information, write: Mr. Battey, County Civil Service, 403 Civic Center, San Diego 1, California.

ASSISTANT STRUCTURAL ENGINEER — $559 to start. Immediate appointment will be made to this permanent position located in an excellent architectural office. The person appointed will develop structural plans and advise on structural validity of proposed buildings and alterations. Applicants should have a B.S. in architecture or engineering or equivalent experience; plus 1½ years' responsible structural engineering experience. For complete information, write: Mr. Battey, County Civil Service, 403 Civic Center, San Diego 1, California.

## situations wanted

ARCHITECT—seeks position in U. S. or overseas to carry projects through from design to supervision, inclusive. University graduate, registered. Fluent English, French, German. Age 32, married. 7 years experience in design, plans and specifications, job administration—all building types. Present position: senior designer in leading architectural firm. Box 546, PROGRESSIVE ARCHITECTURE.

ARCHITECT—38, married, B.Arch. degree, registered Southern State, N.C.A.R.B. certificate requested. Eight years diversified architectural experience. Would like opportunity with small or medium organization engaged in contemporary practice and desiring an imaginative and aggressive architect. Excellent designer. Early associateship or partnership would be expected. Box 547, PROGRESSIVE ARCHITECTURE.

ARCHITECT—will purchase architectural practice. Pleasant, competent, reliable, thoroughly experienced in all phases of work. Competent designer contemporary or conservative architecture, applied design, murals and also painter. Know engineering and practical side of construction. 20 years experience. Experienced in all kinds and sizes of projects. Box 548, PROGRESSIVE ARCHITECTURE.

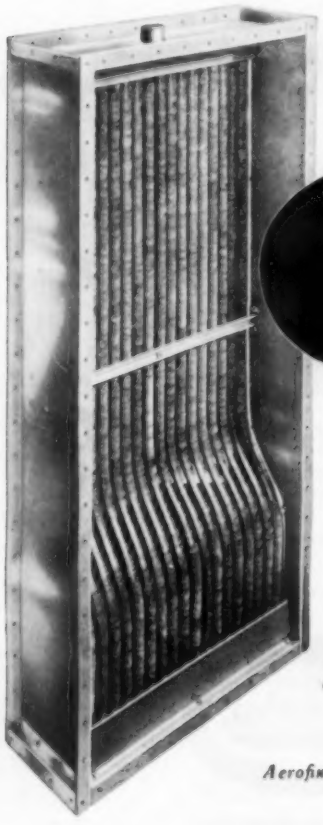
ARCHITECT A.I.A.—registered in State of New York; at peak of creative working capacity; presently in charge of thirty-two projects. Over ten years all-round experience, including recent top responsibility for setting up and running overseas office of over hundred employees, for large U.S. architectural engineering firm. Top flight contemporary designer, with international awards and distinguished client references to his credit. Looking for permanent working partnership possibly with architect who intends to retire. Seeking relocation, preferably in West, with opportunity to utilize proven talent for building up new business. Box 549, PROGRESSIVE ARCHITECTURE.

ARCHITECT—administrator, executive, N.C.-A.R.B., A.I.A. Licensed many States. Twenty-five years managerial and design experience on major architectural projects and heavy industrial construction. Presently member of large firm, but would like to relocate and purchase interest in progressive firm, or join industry where executive ability is required. Box 550, PROGRESSIVE ARCHITECTURE.

ARCHITECT'S ASSISTANT — Latin America, B.Arch., California, Japanese citizen, 25 single, 3 years experience as draftsman-designer. Desires position with U. S. architectural or engineering firm in Latin American countries. Fluent in English and Japanese, fair knowledge of Spanish. Currently employed in California. Resume upon request. Box 551, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN - DESIGNER — single, age 26, graduate accredited architectural college, 2 years experience in public and commercial work with well known Southern firm. Desires location in Europe with U. S. or European firm in any archi-

*(Continued on page 265)*

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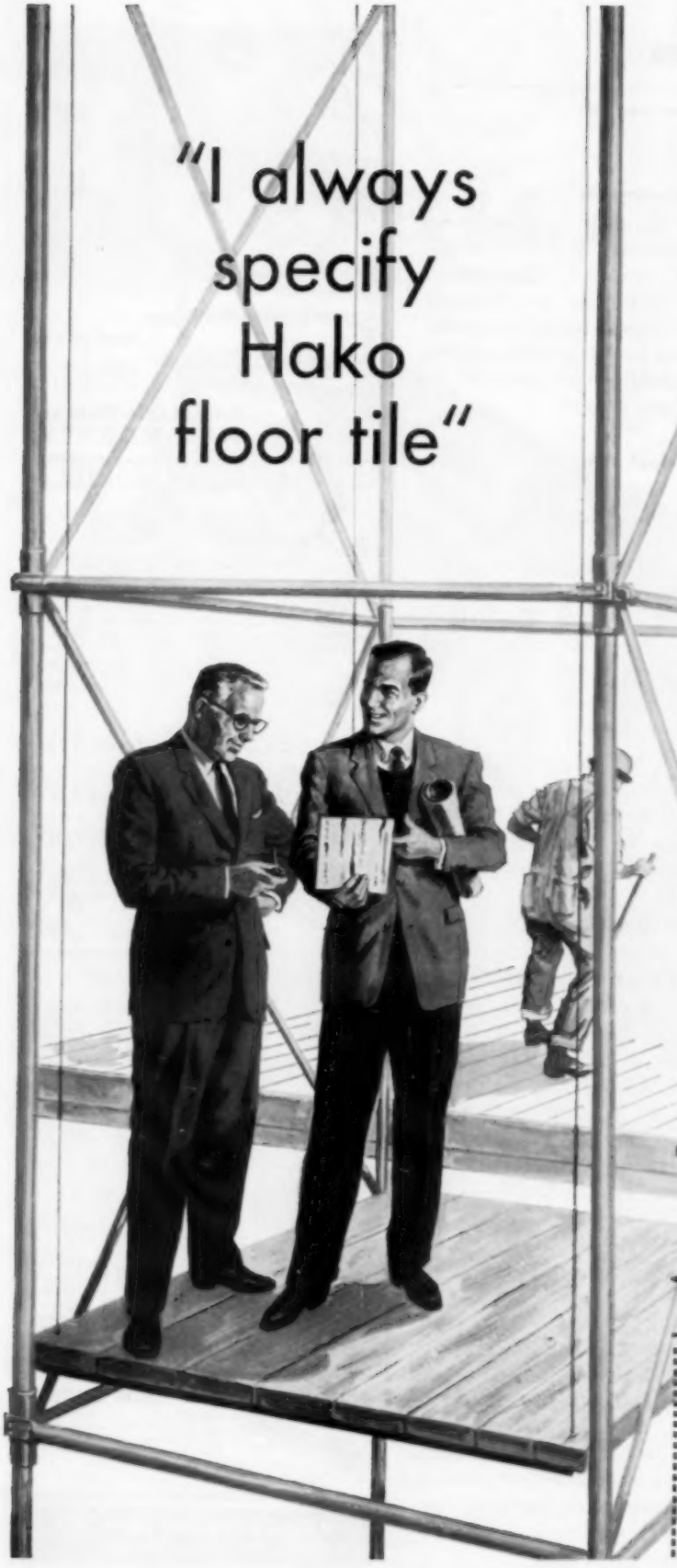
# "I always specify Hako floor tile"



**Building owner:**
"Traffic on some floors will reach a couple of thousand a day. Plenty of cleaning, too."

**Architect:**
"Want to settle that problem? And save money, too?"

**Building owner:**
"You're talking my language. Got an answer?"

**Architect:**
"Sure do. I recommend Hako Vinyl-Asbestos tile. It's tough. It's economical. Stands up to cleaning — and cleans easy."

**Building owner:**
"Don't forget that I want this building to have a class look."

**Architect:**
"Hako will give it to you. The right choice of color and the right selection of floor patterns — you'll get a class look."

**Building owner:**
"Why Hako?"

**Architect:**
"Me, I like to be sure. Hako Vinyl-Asbestos or asphalt tile gives the kind of satisfaction I want my clients to have. That's why I always specify HAKO."

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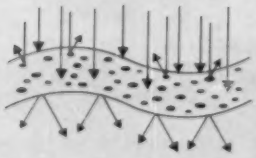
All fiberglas panels are NOT alike. True, many may seem to look alike, but there the similarity ends. Take the problem of heat control . . solved by



Alsynite through the use of Filtron 25, effective heat-blocking formula. It reflects and absorbs heat . . . cuts heat transmission from about 60% with ordinary panels to as low as 10%. Only genuine Alsynite contains Filtron 25.

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THE ORIGINAL TRANSLUCENT FIBERGLAS PANEL

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**ALSYNITE CO. OF AMERICA**
Dept. P-2 - San Diego 9, Calif.

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# notices

(Continued from page 258)

### new expansion

HARDWARE ENGINEERS & CONTRACTORS, a subsidiary of OVERLY MANUFACTURING COMPANY, Greensburg, Pa., has added an Architectural Building Products Division to enable the company to offer a more complete line of architectural products in western Pennsylvania.

### new vinyl tile

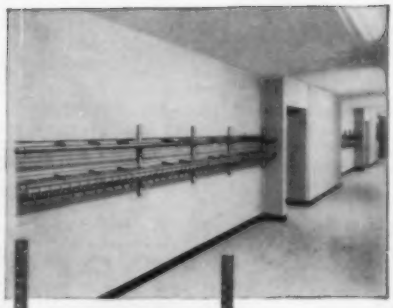
NATIONAL FLOOR PRODUCTS CO., INC., Florence, Ala., has begun the manufacture of flexible-type all-vinyl floor tile. Shipments to a limited group of wholesale distributors are now being made, reports E. STANLEY ROBBINS, President and General Manager.

### new sales offices

E. G. DAVIS, Sales Manager, SIMPSON REDWOOD CO., San Francisco, Calif., announces the opening of four new sales offices in Minneapolis, Cleveland, Kansas City, and Atlanta.

### association officers

The ALUMINUM WINDOW MANUFACTURERS ASSOCIATION announces reelection of ROBERT L. KLEIN, WINDALUME CORP., Kenvil, N. J., President and Treasurer; JOHN JANSSON, Executive Vice-President; and election of WILLIAM E. ZIPP, CECO STEEL PRODUCTS CORP., Chicago, Ill.; A. G. MONROE, REYNOLDS METALS CO., Window Division, Louisville, Ky.; E. C. MUNRO, WARE LABORATORIES, INC., Miami, Fla., as Vice-Presidents. New Board of Directors also includes: CHARLES H. THOMPSON, WILLIAM BAYLEY CO.; JOHN J. DONOVAN, JR., UNIVERSAL WINDOW CO.; TYLER L. RIGGEN, VALLEY METAL PRODUCTS CO.; JAMES ALLINSON, J. S. THORN CO.; A. L. MUNSELL, TUSCON STEEL DIVISION OF REPUBLIC STEEL CORP.; GEORGE A. MURDOCK, PRIMALUM, BENADA DIVISION OF TEXTRON, INC., and FORD D. ALBRITTON, JR., ALBRITTON ENGINEERING CORP.



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**WARDROBE SYSTEMS**

Solve the pupil wraps problem efficiently with Wallmount Coat and Hat Racks. Mount on any available wall space. Hat shelves and hanger bar adjustable on permanently attached columns to height for any age group. Double hat shelves and double row of spaced coat hooks accommodate 6 pupils per running foot. Basic 3' 2" or 4' 2" units interlock to make continuous racks to fit any space or capacity requirements.

**OTHER Schooline® UNITS**

**CHALKROBE®**
Dual-purpose wardrobe rack. Provides two 4 ft. hat shelves, 4 ft. Hook and Hanger rails for coats adjustable in height to all age groups. 4 ft. overshoe shelf. And, on other side a 50" x 48" chalkboard. Portable or stationary.

**CORKROBE®**
Identical to Chalkrobe but with pin-up cork board instead of "Chalkboard". These units permit complete flexibility in use of floor space. Can be anchored to floor, or wheeled about on casters. Hold wraps out of the way in orderly and efficient manner.

**CLOSURE UNITS**
With closure panels (as original equipment or add-on units) Chalkrobe and Corkrobe units serve as flexible room dividers, movable walls or screens. Widely used to enclose temporary class rooms, to "build" cloak rooms, meeting rooms, etc.

**OVERSHOE RACKS**
Matching units for Wallmount. Keep overshoes off-the-floor in an orderly manner.

*Write for "Schooline" Catalog SL-510*

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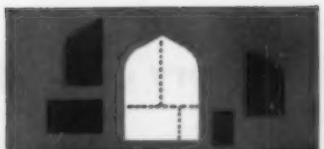

**for Add-a-Unit Church Construction**

## with glulam arches by Timber Structures, Inc.

The church shown here is an excellent example of wise church planning. In 1953 the fellowship hall was started, using glulam timber arches for structural framing. These arches support the roof, and relatively light, inexpensive walls are adequate. Arches also supply impressive beauty to the interior.

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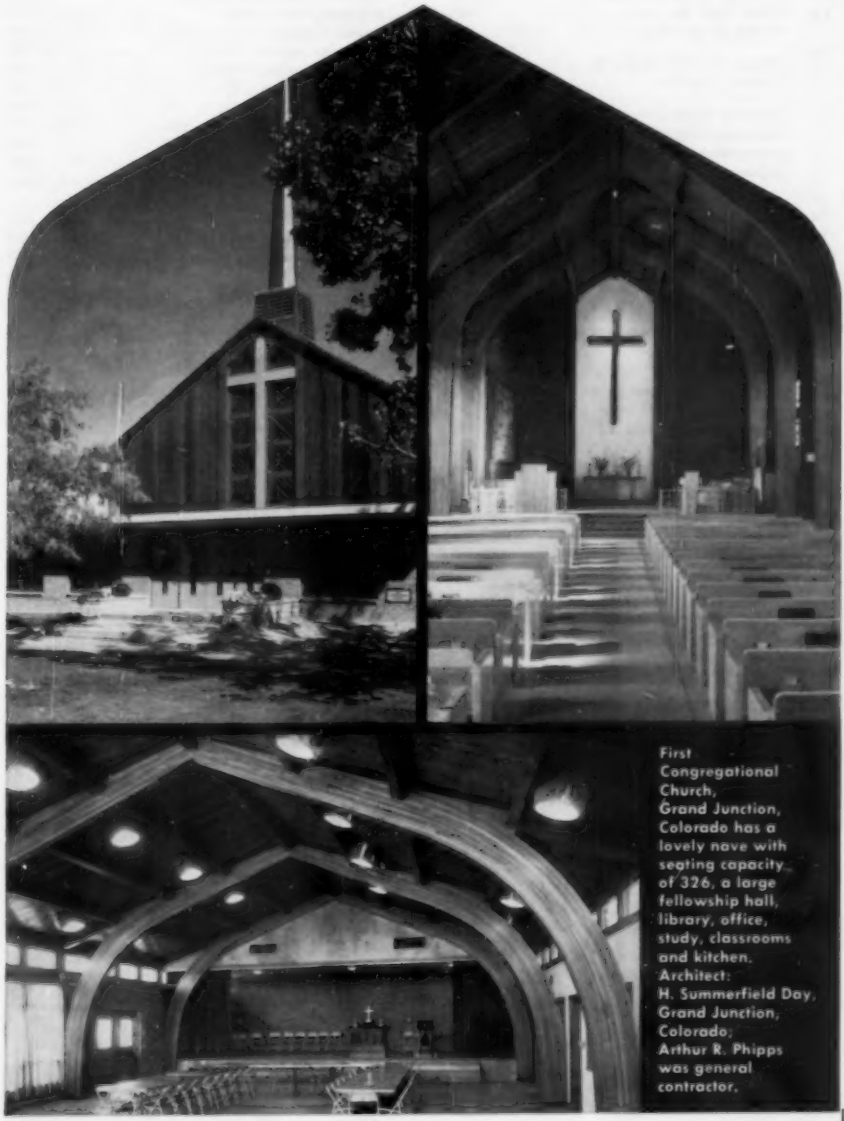
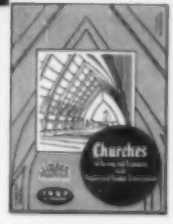


First Congregational Church, Grand Junction, Colorado has a lovely nave with seating capacity of 326, a large fellowship hall, library, office, study, classrooms and kitchen. Architect: H. Summerfield Day, Grand Junction, Colorado; Arthur R. Phipps was general contractor.

A new booklet, "Churches of Beauty and Economy", shows twelve outstanding applications of glulam timbers in church construction. Get your copy from your nearest Timber Structures representative, or write us for it.

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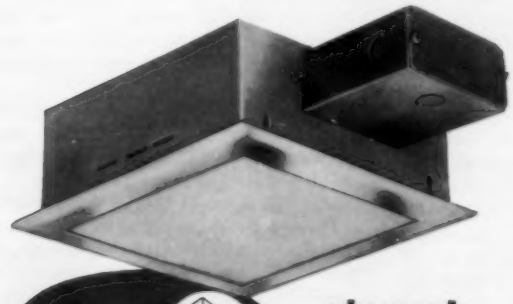


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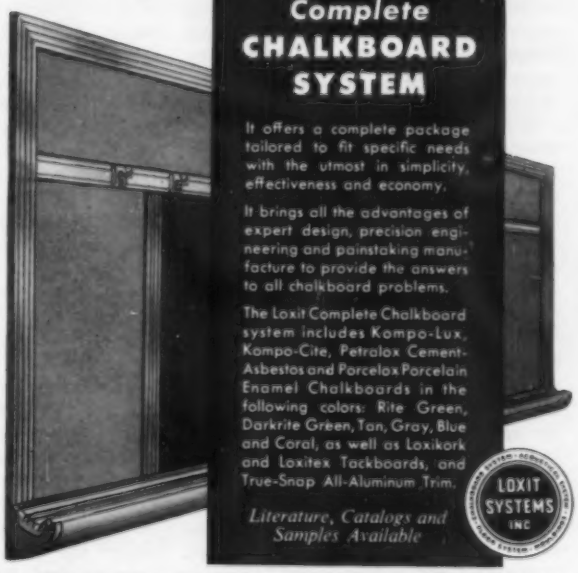

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# regionalism

**Dear Jim:** Your letter about the importance of the local effect of architecture on local "society" raises many important and puzzling questions. You say: "Our *artists* (including architects) fail to make any real impact except on a small sliver of our society which does, or at least pretends to, understand and appreciate. The common man is uninterested in what we do and so is ignored by us." You then go on to describe a project of yours —an educational institution—designed for a very particular area which has its own special, dominant natural setting, and is peopled by a cohesive community with a marked ethnic, cultural, and social background. You tell me that you are using local materials, restricting your colors to those of local earth tones, local artifacts, and the "natural forms" of the region, and in general basing your design on forms capable of "esthetic perception" by "the people who occupy it and the people of the region who are served by it."

"Esthetic perception," you say, "is too often shallowly considered by the architectural press and the architectural critic, which results in the encouragement of cliché-isms inspired by the work of the 'giants' on an international basis, instead of the fundamental considerations which, I feel, should inspire and motivate architecture *locally*. The Manufacturers' Trust in New York is a fine and noble building because it is *regional* to New York; built anywhere else it would be wrong and an affectation . . . in terms of the esthetic perception of *the people* who will experience it, this is a perception based on the experiences of the 'great city,' the experiences of watching wealth at work, the experiences of sophisticatedly evaluating man-made environments and man-made things, and the experience of a lively intercourse of thinking involving metropolitan and worldwide problems. So Bunshaft's building is good, technically and esthetically."

"What then," you ask, "are the considerations of *the people* in an area involved primarily with agriculture, grazing, mining; boxed in by mountain ranges or deserts; isolated by physical barriers —in complete communication with the rest of the world, perhaps, but isolated from it physically. A people whose cultural interests are in large measure involved with nature rather than man-made things; whose hobbies are not the theatre, the opera, the concert, but square dancing, fishing, hunting, skiing; whose social life is gregarious, active, unsophisticated, but intelligent and sensitive. Manufacturers' Trust would be a curious and interesting thing to them, but as environment, undesirable and unappreciated."

Before I start to disagree, Jim, let me say where I agree with you. I too believe that where there are strong regional characteristics, indigenous and continuing—whether physical, cultural, or social—and where there are obviously appropriate local materials, textures, colors, techniques—these factors should be basic to the design of buildings there. In the case of the project you describe, you are apparently working in such a region, and you surely have every reason to worry about these problems of appropriate design.

However, I think that it is dangerous to generalize about this. One can sometimes assume a regional characteristic which does not truly exist; which is phony, superficial, or outlived. Just as an example, I have been in a restaurant in a certain section of Texas where the local people, when they saw that some New Yorkers were present, put their hats on to eat and developed a "local" speech twang which did not normally exist. There are, as you know, professional cowboys, and professional down-Easterners, and professional Brooklynites.

While it is probably true that there are still parts of the United States where one sort of cultural interest is dominant, and others where *the people* have other concerns, the trend is certainly toward common tastes and understandings. I think, for example, you assume a "perception" on the part of the "sophisticated" New Yorkers who experience the Manufacturers' Trust which does not generally exist. Most of the people who pass that building each day take subways home to the Bronx, *never* go to the theater (which is supported largely by out-of-towners, some from your part of the country), and listen in the evening to the sort of square-dance music, on television, that you describe as a recreation of your isolated area.

In short, I don't think "esthetic perception" is a matter of where you live, but rather of how sensitive to the esthetic experience one has become, and how perceptive to any experience one has learned to be. Perception, in the sense of appreciative understanding (let us say, of Picasso's paintings) need not be limited to a Parisian, or a New Yorker, or an Indonesian. It would rather be limited to those persons who had learned to react to the emotional experience of an artistic expression.

Another danger, I think, is in assuming that a vital, natural environment must color *in a certain way and no other* a fabricated environment. If this were so, the snow-covered Swiss Alps might be expected to produce all one sort of architecture—probably igloos. Actually, on three slopes one finds derivations of French, German, and Italian backgrounds—and some very fine nonindigenous "international" architecture. As for colors, I remember driving through Arizona one afternoon and watching the mountains assume every color in the spectrum as time went on. In areas where earth colors seem dominant, a treat to the eyes through the use of strong primary colors, instead of a repetition of the "natural" palette, can be very refreshing. In a Santa Fe mud-and-dust section, Alexander Girard's personal taste in highly sophisticated chroma is delightful.

Finally, I have been very wary of the approach to public understanding which uses familiar, understandable forms as a device, since I heard the Soviet rationale, on my visit to Poland in 1952, that "Soviet architecture is designed to the needs and understandings of the people, while so-called modernists produce buildings that no one understands but themselves." This was an excuse at that time for endless repeating of pseudo-regional, imitation-traditional forms. This is, of course, a very difficult problem, and involves questions of leadership and self-expression as well as esthetics and emotional perceptions and reactions. Carried to its extreme, this argument would prevent any advance (the people don't understand it), or would insist on compromise (just give the people a little at a time to digest), and would prevent the great, bold statement. I believe the bold advance is just as important in an agricultural or mining area as it is in an urban center, and the bold genius is more likely to have his own "style" than to adapt himself to regional influences.

The underlying difficulty, I think, is in trying to define the "common man" that we want to satisfy. Would the "esthetic perception" of the faculty in your institution be the same as that of the students, and would either be equal to that of the agricultural workers in the region? Or, in New York, would the design understanding of the officers of the Manufacturers' Trust be the same as that of a shoe clerk who comes in to deposit five dollars? Might there not be greater correspondence between that of the city clerk (who also likes to fish on his vacations) and a salaried worker in a Colorado town; and between that of the Westerner who comes to the big city to see the shows and go to the night clubs, and his big-city counterpart; and between a teacher in your school and a teacher at Columbia University?

I do think these are very important questions, and you've started me on new thinking about them. And I'm sure you're going to produce something that, as an actual case in point, will be more important than these words.

Thomas H. Creighton

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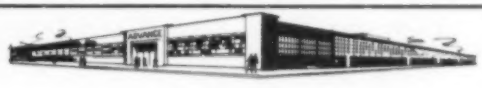

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